
Appendix H
Transit Technical Memorandum



COLORADO
Department of
Transportation

**I-25 PEL: CO Springs Denver South
Connection**

Transit

I-25 PEL: Colorado Springs Denver South Connection

August 2019

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Background

This technical memorandum describes the evaluation of transit alternatives for the Interstate 25 (I-25) Colorado Springs to Denver South Planning and Environmental Linkages (PEL) Study.

The Colorado Department of Transportation (CDOT) initiated the PEL Study to develop a plan of action to move projects forward along I-25 between Monument and C-470, a critical corridor for regional and statewide travel between the metropolitan areas of Colorado Springs and Denver. The PEL Study aims to identify transportation priorities in advance of secured construction funding, positioning CDOT to accelerate the environmental analyses, and to save time in implementing projects when construction funds are identified. The PEL Study has been structured with robust involvement from the public, elected officials, and local, state, and federal agencies to develop partnerships and support for implementing future transportation improvements.

This PEL Study lays the ground work for future improvements on I-25 by:

- Identifying the needs and goals in the corridor.
- Helping to identify, define, and prioritize projects based on the corridor's greatest needs.
- Identifying significant environmental constraints that may influence design options and/or delay project development with lengthy environmental reviews.
- Developing planning-level estimates of project costs and identifying necessary financing and funding options to implement improvements.
- Providing a framework for CDOT to engage with local corridor communities, regional travelers, and other interested stakeholders to understand their concerns and ideas for immediate and longer-term improvements.
- Supporting an efficient transition to National Environmental Policy Act (NEPA) processes, final design, and construction advertisement once funding is identified.

PEL Study Vision

The vision for the PEL Study was to conduct an open and transparent PEL process to build partnerships and provide a roadmap to implement projects that improve safety, trip reliability, and mobility on the vital stretch of I-25 between Monument and C/E-470. A focus was placed on advancing an early action construction project between Monument and Castle Rock.

The purpose for transportation improvements in this corridor is to enhance safety and improve travel reliability and mobility of I-25 between Monument and Denver South. Corridor improvements should be compatible with the built and natural environment; support corridor communities' land use, development, and economic goals; and integrate and leverage technological innovations and advanced travel demand management/transportation system management strategies. The Purpose and Need technical memorandum (Appendix E of the PEL report) provides additional information on the purpose and need for corridor improvements.

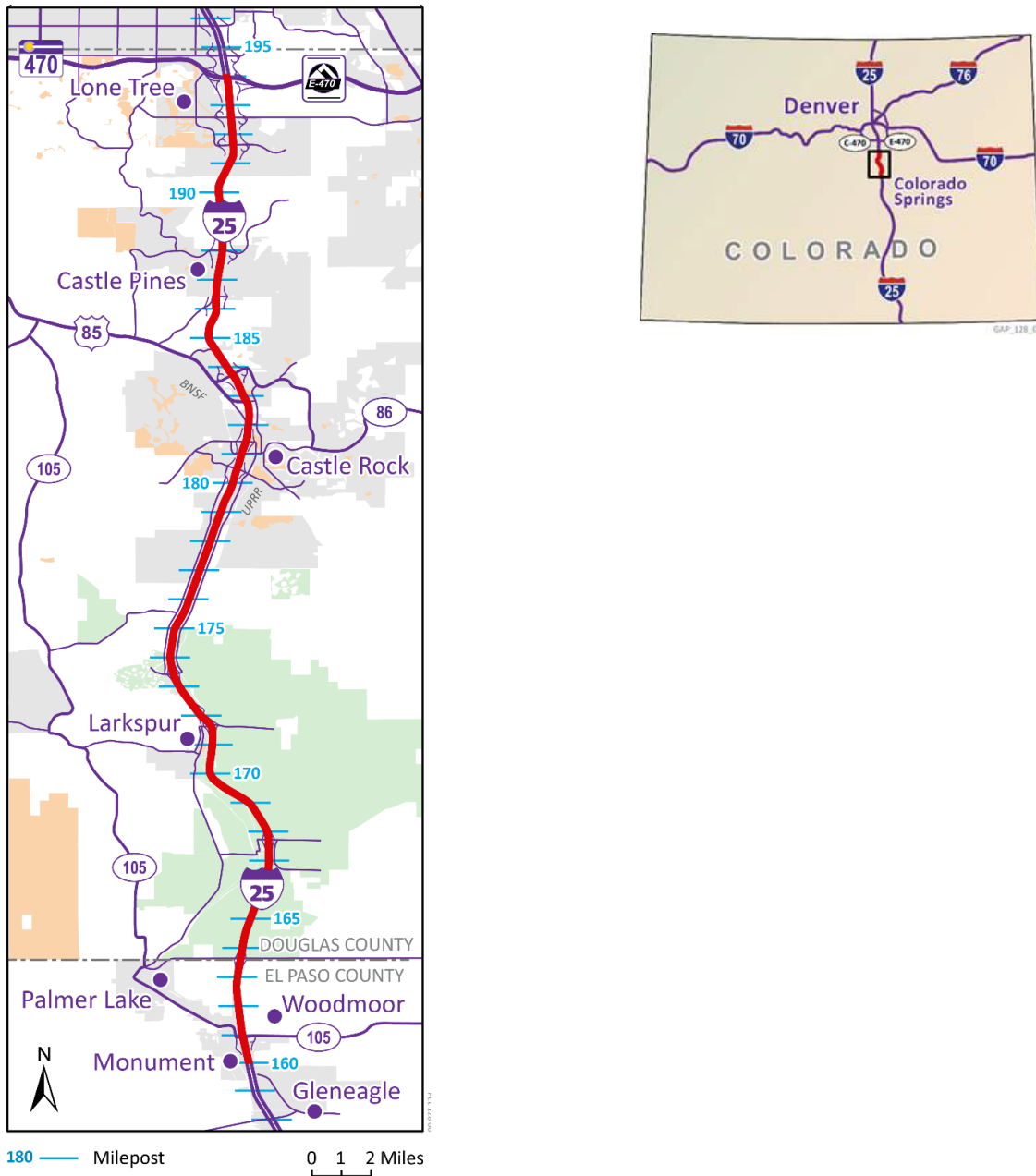
Multimodal solutions were identified as key to meeting mobility needs. Transit was a central consideration in the PEL Study, with many of the options building on ongoing work by CDOT's Division of Transit and Rail (DTR), including efforts to expand regional bus service through its

Bustang program and planning for passenger rail through the Interregional Connectivity Study (ICS), Statewide Transit and Freight Rail Plan, and other planning studies. The PEL Study sought to support and further, but not revisit, ongoing transit planning and implementation.

PEL Corridor

The Study Area extends along I-25 from the Town of Monument (mile post [MP] 160) north to the I-25/CE-470 interchange (MP 194) in three segments (Figure 1). The travel and land use characteristics described in Section 1.3 broadened the consideration of transit to serve demand in the urban markets rather than only through the PEL corridor limits along I-25.

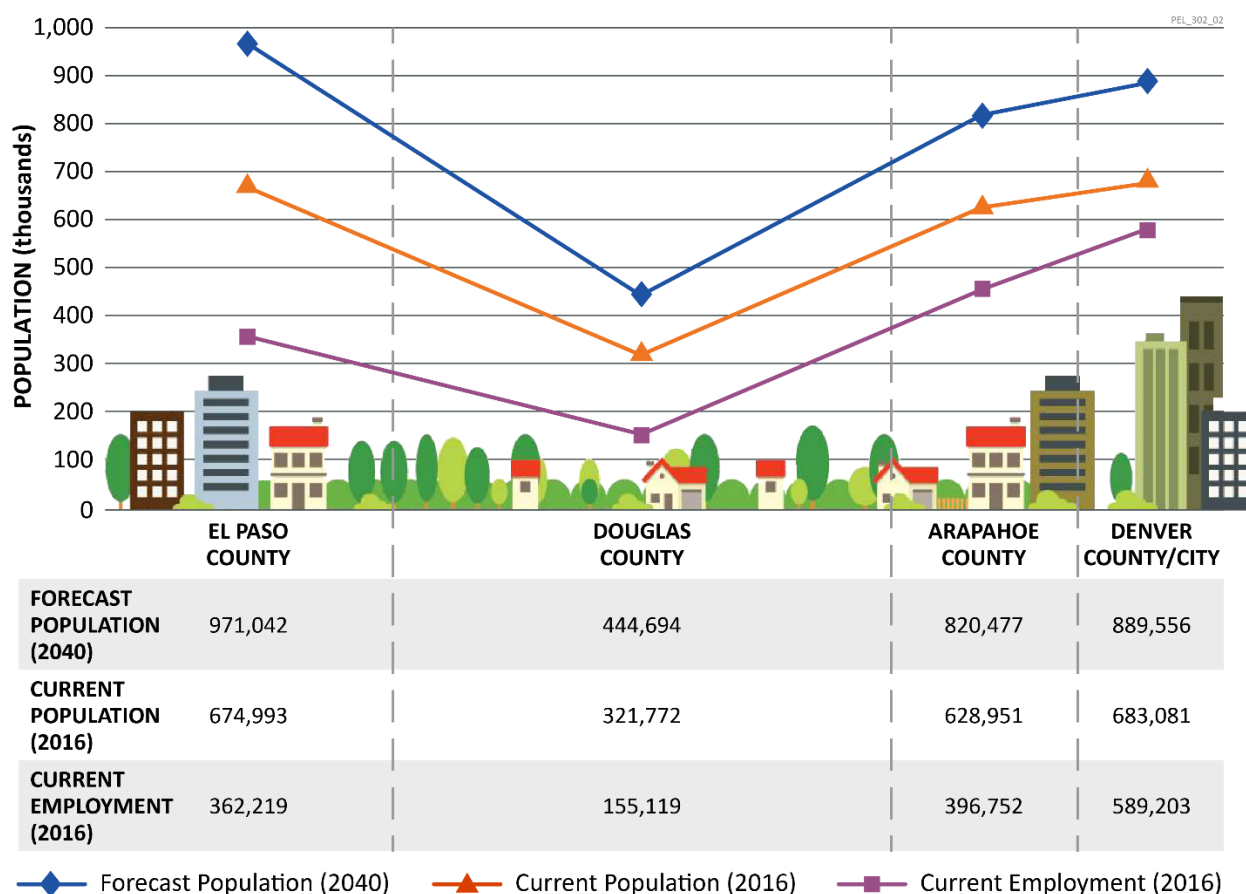
Figure 1. PEL Corridor Limits



Travel and Land Use Characteristics

Beyond the immediate corridor are the largest urban centers within the state: Denver and Colorado Springs. However, within the immediate corridor, population and employment decreases and land uses start to transition to more rural character with lower density single family residential and large tracts of Douglas County open space. Figure 2 is an illustration of how land use and population within the corridor can be understood as an inverted bell curve where growth in the urban centers increases the demand for travel through the rural section and along the length of the corridor. Although the focus of the PEL Study was on the Monument to C/E-470 highway corridor, transit options extended beyond the immediate corridor in consideration of the broader travel and land use characteristics influencing transit markets and the density needed to support transit service.

Figure 2. Colorado Springs to Denver I-25 Corridor Population and Employment



Source: Colorado Department of Local Affairs, online dataset, accessed March 25, 2019. <https://demography.dola.colorado.gov/population/>

Travel times within the corridor vary greatly; on average, travel through the corridor takes just over 30 minutes, but travel times of 4 hours or more are recorded periodically. The Purpose and Need technical memorandum (Appendix E of the PEL report) provides additional details on travel delays and reliability. Volatility of travel times through the Study Area hinders economic vitality and diminishes effective growth in employment, freight service, military travel, and tourism. Stakeholder groups report the importance of reliable trips and reliable alternate travel

choices, such as transit, to attract and retain new businesses and employees to the region (See Appendix D of the PEL report for additional information on stakeholder coordination). Denver Regional Council of Governments (DRCOG) and Pike's Peak Area Council of Governments (PPACG), along with the Regional Transportation District (RTD) and Mountain Metro Transit, report the demand and vision for regional transit and vanpool choices exceed anticipated resources. Within the corridor, public input into the PEL Study supports interest and demand for transit options to improve overall mobility choices in the region.

Regional Bus Service

Intercity bus service has been offered intermittently between Colorado Springs and Denver since 2004. From 2004 to 2012, the Front Range Express (FREX) service operated between Colorado Springs and Denver, with stops in Monument, Castle Rock, and Greenwood Village and serving nearly 500 passengers daily. In 2010, the service was reduced due to funding constraints and the stop in Castle Rock was eliminated. In 2012, the service, which by this time carried approximately 200 passengers daily, was discontinued.

In July 2015, CDOT launched Bustang, a regional bus service, along the I-25 Front Range in recognition of a growing transit mobility need. Bustang operates along the I-25 corridor between Fort Collins and Denver and Colorado Springs and Denver. Weekday service on the Colorado Springs to Denver South Line began in 2015, and in 2016 CDOT added weekend service because of the demand on the South Line, which currently serves 6,000 to 7,000 riders monthly. In December 2018, CDOT expanded the South Line to add three trips to and from the Denver Tech Center to complement the seven weekday trips to and from central Denver.

Bustang service operates in the general-purpose lanes along the corridor and is subject to the delay and congestion within the corridor. Presumably, improved reliability and reduced travel time for Bustang would further increase ridership demand.

Passenger Rail

Passenger rail is available in the northern portion of the corridor, where the RTD light rail line is being extended from the current end of line station at Lincoln Avenue with three additional stations in Lone Tree. The southeast light rail extension is scheduled to open in May 2019. By 2035, the new stations, along with growth at the existing Lincoln Station, are anticipated to serve 11,000 riders daily (RTD, 2014). South of RidgeGate, rail service is not available within the Study Area, but CDOT has conducted several studies to advance passenger rail along the Front Range and the *Colorado State Freight and Passenger Rail Plan* identifies Front Range passenger rail as an important component of CDOT's future multimodal transportation system (CDOT, 2018).

Outside the scope of the PEL Study but related to the development of passenger rail in the state, in 2017, the Colorado Legislature established the Southwest Chief & Front Range Passenger Rail Commission (the Commission) to facilitate the development of a Front Range passenger rail system. CDOT is working with the Commission to further a service development plan for Front Range passenger rail that will develop a purpose and need for passenger rail service, evaluate alignments and technology options, identify ridership and level of service (such as number of trains per day), conduct a high-level environmental analysis, develop cost estimates, identify potential service operators (such as Amtrak, BNSF, or a private operator), and other details.

Public and Agency Outreach and Input

Chapter 7 and Appendix D of the PEL Study report provide details on the extensive public and agency outreach effort and input into the PEL Study. Attachment A contains a subset of public input specific to transit.

There was nearly universal agreement throughout the PEL Study that congestion, safety, and reliability needs in the Gap segment of I-25 between Monument and Castle Rock were the top priorities within the corridor. However, there was also strong sentiment that transit connections needed to be considered as part of the travel needs between the urban areas. A few comments suggested that CDOT not fund highway expansion and put all resources into rail, although this was not a common theme, and supporters of transit options felt the immediate need was for highway expansion.

The lack of transit options was identified as one of the top three concerns for corridor travel by 30 percent of respondents at the first public meetings, and 10 percent of respondents stated that if passenger rail was available, it would be their preferred method of travel in the corridor. Some comments raised concerns about the cost-effectiveness and long time frame required for new rail and suggested use of the freight rail lines or bus transit would be a better solution than building a new rail service. While rail was generally preferred over bus transit, several comments noted expanded regional bus service could be a good interim option and that CDOT ought to do more to promote its Bustang service and shift focus as an agency to making transit more attractive.

Transit service was of particular interest in Castle Rock, where public meeting participants requested CDOT consider expanding service in Castle Rock. Both bus and rail service were of interest, specifically in a Bustang stop and extending light rail from Lone Tree to Castle Rock.

DTR represented the PEL Study at all the public meetings and provided a briefing to the PPACG Board on previous rail planning studies. At each meeting, transit was a central discussion, and DTR staff noted strong interest from the public in workable transit solutions.

Transit was also a regular discussion at many of the Technical Working Group/Resource Agency Group and Steering Committee meetings. Agencies and officials provided context of local and regional transit options, provided insight into corridor communities' interest in transit, and reported moderate to high levels of interest from their constituents for multimodal travel options. The Mountain Metropolitan Transit Director noted early in the Technical Working Group discussions that additional information would be needed to further or endorse the ICS recommendations, including effects on the Colorado Springs Airport and overall cost-benefits. This additional evaluation is planned as part of the Rail Commission's service development planning. Castle Rock representatives reported some interest among the Town Council in reevaluating transit service for the town based on public interest; the interest grew throughout the PEL Study. Castle Pines representatives also noted interest, and both Castle Rock and Castle Pines were engaged in assessing potential Castle Rock transit stations.

Transit Alternatives

CDOT considered transportation improvements in the corridor grouped by categories of core concepts and supplemental elements. Core concepts are transportation improvements that could meet the needs of the corridor by themselves, without needing to be combined with other

types of improvements. Supplemental elements are transportation improvements that would need to be combined with other types of improvements to meet the corridor needs. Although none of the transit alternatives would meet the needs of the corridor by themselves, the PEL Study also recognized that transit alternatives were necessary to be combined with highway improvements to meet CDOT's multimodal transportation mission and were central to fully meeting the corridor's mobility needs. The need for transit was reinforced by public and agency input and ranked among the highest valued improvements CDOT could make in the corridor.

The PEL Study divided the corridor into three segments based on roadway characteristics and surrounding land use (Figure 3). Transit alternatives, like highway alternatives, were evaluated independently for each segment; although the study recognized that transit generally required regional solutions to serve the regional travel demand and emphasis for transit alternatives was for corridor-wide options.

Providing a reliable trip and reliable travel choices between Colorado Springs and Denver is a high priority for the public, local officials, and economic development groups. Input provided through the PEL Study suggests strong support for a regional bus solution and long-term desire for rail solution between the urban centers.

CDOT considered the following five primary transit alternatives, described in more detail in the recommendations section of this technical memorandum:

- Add Passenger Rail along I-25
- Expand Bustang Service
- Add Commuter Rail Along Existing BNSF/UPRR Freight Rail Corridor
- Extend Light Rail Transit from Lone Tree South along I-25
- Add Bus Rapid Transit (BRT)

Each transit alternative was evaluated during the Level 1 evaluation of alternatives. At the end of that evaluation, two of the alternatives—Add Passenger Rail along I-25 and Expand Bustang Service—were carried forward as Recommended Transit Alternatives. The remaining three alternatives were Transit Alternatives Not Recommended to be carried forward for further study.

In formulating PEL Study recommendations, CDOT revisited and refined the transit recommendations carried forward from the Level 1 evaluation and recommended Expand Bustang Service as a short-term improvement and Add Passenger Rail as a long-term improvement, in conjunction with highway capacity improvements and other supplemental elements.

Recommended Transit Alternatives

Add Passenger Rail along I-25 Corridor

In 2012, CDOT, with funding from the Federal Railroad Administration (FRA), conducted the Interregional Connectivity Study (ICS), which was completed in 2014 and evaluated if and how high-speed transit could be deployed to connect communities and destinations for interregional business and tourism travel along the Front Range. The ICS identified potential alignments, stations, and operating parameters to provide new high-speed rail service for Colorado's Front Range metropolitan areas. The ICS evaluated alignments serving major population centers from Pueblo to Fort Collins, with the recommended alignments generally following I-25 north and

south of Denver. Within the Study Area, the ICS alignment was located along the east side of I-25, generally adjacent to but outside of CDOT right of way, except through the towns of Monument and Castle Rock where the ICS alignment was planned within CDOT's right of way for approximately 3 miles from SH 105 to north of County Line Road in the Monument area and approximately 8 miles from north of Tomah Road to Meadows/Founders Parkway in Castle Rock. Within the corridor, the ICS recommended stations in Monument (south of County Line/Palmer Divide Road), Castle Rock (south of Plum Creek Parkway), and Lone Tree (at the planned RTD RidgeGate Parkway station, which is scheduled to open in May 2019).

Attachment B contains the plan sheets for the section of the ICS alignment between C/E-470 and Monument. General station locations are shown in Attachment B, but detailed station area planning was not conducted as part of the ICS. The PEL Study assumed these same markets would be served and did not revisit the ICS station locations.

The ICS concluded that high-speed transit would provide many benefits to the state. Within the overall ICS alignment and station recommendations, a route from northern Colorado Springs (Briargate) to Denver International Airport (DIA) was the strongest first phase of a potential high-speed passenger rail service along the Front Range based on the highest ridership and financial performance. After completion of the ICS, CDOT conducted a further evaluation of service to Denver Union Station (DUS) interoperating on the Regional Transportation District FasTracks system compared to the original ICS recommendation for service to DIA. The route along the corridor did not change based on the Denver terminus at DUS or DIA as RidgeGate Station would be the terminus within the PEL corridor under both options.

Although the ICS evaluated and recommended high-speed technologies (consistent with FRA guidance) for passenger rail in the Front Range, the Southwest Chief & Front Range Passenger Rail Commission will be evaluating both high speed and commuter rail technologies for Front Range passenger rail. Both technologies are consistent with CDOT's vision for providing passenger rail along the Front Range. The ICS alignment would be appropriate for either technology; however, there may be opportunities to optimize the alignment to require less right of way and cost with a lower speed technology.

The PEL Study supports the conclusion from the ICS Study and the Commission charter that passenger rail would provide many benefits to Colorado and that service between the state's largest urban areas of Colorado Springs and Denver is a high priority. CDOT recognizes the public support and mobility benefits of regional transit between Colorado Springs and Denver, and this PEL Study recommends passenger rail as a long-term improvement in the I-25 corridor, in conjunction with highway capacity improvements and other supplemental elements to support more immediate transit solutions, such as the other recommended transit alternative for expanded Bustang service.

The PEL Study provided additional context to the environmental and social constraints in the Study Area and, as a result, notes that the rail alignment through the Gap portion of the corridor as indicated by the ICS alignment could be more challenging to implement based on land use and ownership. Through the rural section from Monument to Castle Rock, the land on the east side of I-25 consists of primarily private lands protected from development under conservation easements. The west side of I-25 is also undeveloped through this area and consists of a mix of primarily Douglas County open space land, private conservation easements, and the town of Larkspur. Although the PEL Study and I-25 South Gap Environmental Assessment did not

initiate right of way discussions with land owners, coordination with Douglas County and Douglas County Land Conservancy through these studies indicates that development of a transportation corridor on the west side may be less contentious than along the east side of the interstate and should be considered as passenger rail planning continues.

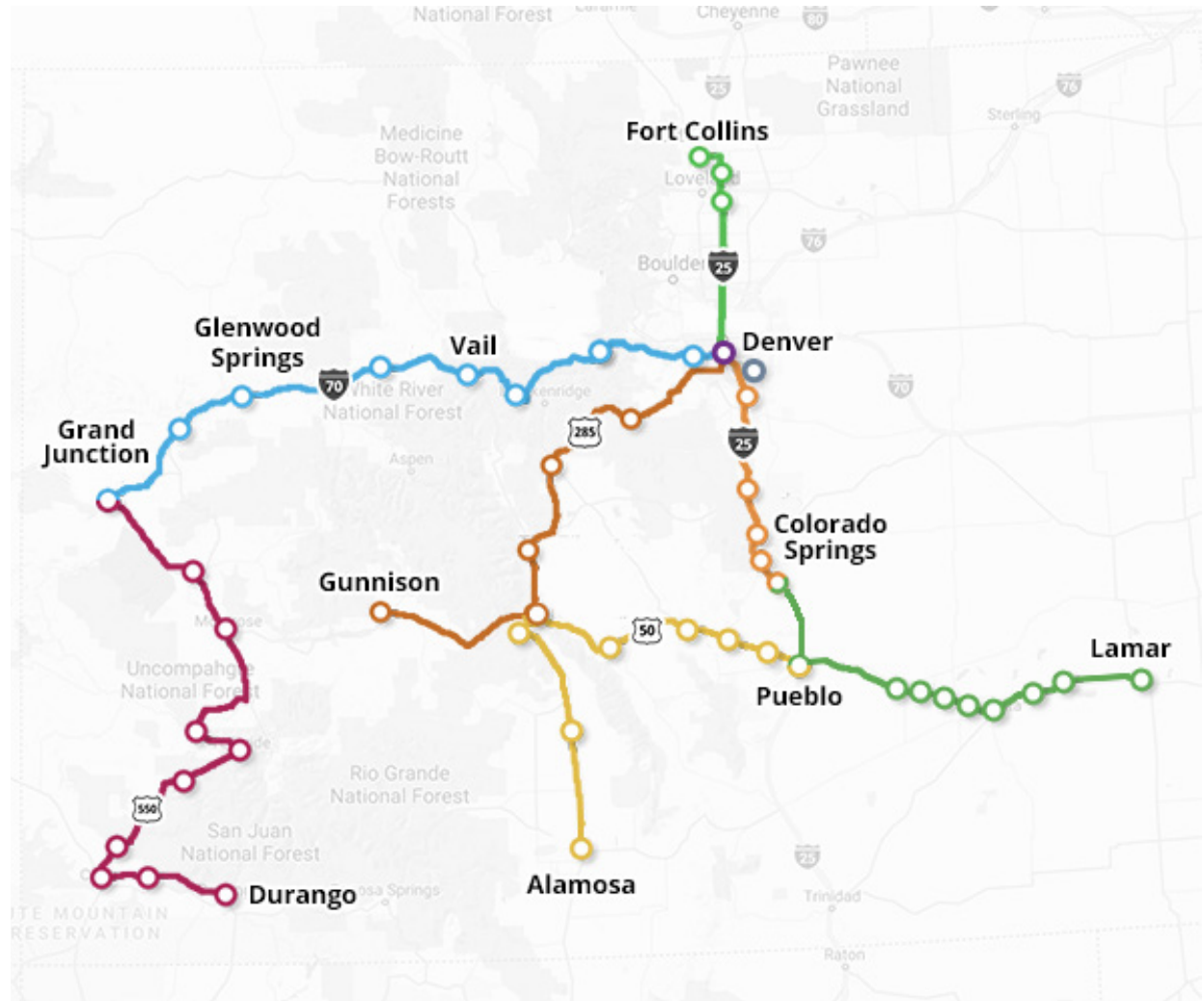
Through the Castle Rock area, transportation improvements for highway and rail are planned to take advantage of CDOT right of way. Since both recommendations will have impacts outside of CDOT's right of way, the consideration of right-of-way constraints and priorities will need to be considered cumulatively as highway and rail projects are furthered through this area.

Between Castle Pines and RidgeGate Parkway in the northern portion of the PEL Study corridor, Douglas County has preserved 40 feet of transit right of way along the east side of I-25. The ICS alignment generally takes advantage of this right of way but the highway recommendations through this area could also encroach upon the preserved transit right of way. As with the Castle Rock area, developing future highway and rail projects through this area will need to consider cumulatively the effects and phasing of these components of the PEL Study recommendations.

Expand Bustang Service

CDOT's Bustang service began operating in July 2015 as an interregional express bus service connecting commuters and travelers to urban centers, key destinations, and major local transit systems along the I-25 Front Range and the I-70 Mountain Corridor. The service was later expanded to include Outrider Service along US 285, US 50, and US 550 (Figure 3).

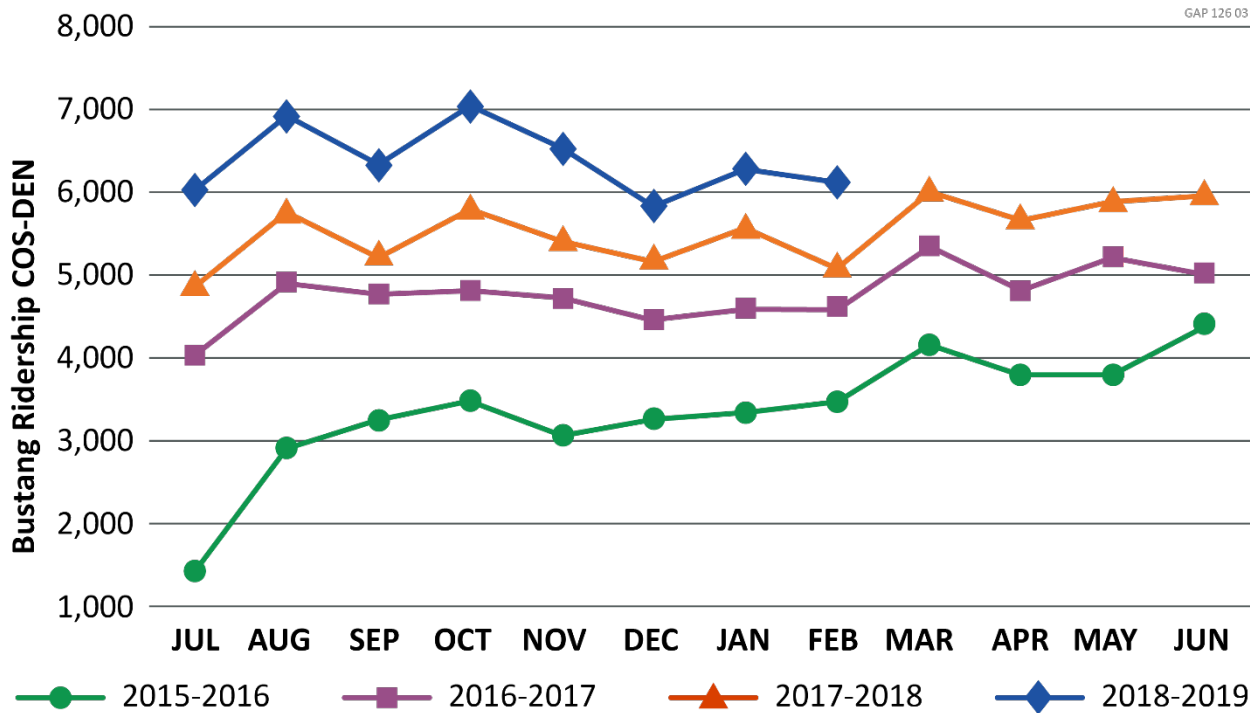
Figure 3. Bustang Service Map (as of March 2019)



Two Bustang lines currently operate within the corridor: the South Line, Colorado Springs <-> Denver and the Denver Tech Center (DTC) line Colorado Springs <-> DTC. Both were expanded during the PEL Study, with weekend service added for the South Line in April 2017 and new DTC service initiated in December 2018.

Bustang ridership has continued to grow since its inception, and CDOT has responded to the demand by increasing the frequency of service so that the Bustang South Line served more than 66,000 passenger trips in 2017/2018 and is on pace to continue solid ridership growth in 2018/2019 (Figure 4).

Figure 4. CDOT's Bustang Monthly Ridership between Colorado Springs and Denver (South Line)



The Expand Bustang Service alternative would continue to expand and improve Bustang service in the corridor through a combination of the following elements:

- Expanded Bustang service
 - Increased Service or Destinations
 - Managed lanes that allow bus travel, including Express Lanes (ELs)
- Expanded Bustang Markets
 - New carpool lots and Park-n-Ride facilities in Monument and/or Castle Rock
 - New transit station in Castle Rock

CDOT's DTR, which operates Bustang, has been an active participant and partner in the PEL Study, and DTR has been responsive to public input provided through the PEL process and meetings to advance this alternative of expanding and improving Bustang service, in conjunction with highway capacity improvements on I-25 and other supplemental elements as a short-term improvement. The PEL Study supports DTR's continued expansion of Bustang service. The sections below provide more details about each of the elements that would support expanded Bustang service.

Expand Bustang Service: Increased Service or Destinations

Bustang currently serves Colorado Springs, Monument, DTC, and Denver. CDOT could operate more bus trips through the Study Area to provide more service throughout the day for current destinations or add additional destinations. CDOT regularly evaluates Bustang service and increasing ridership demand and has been adjusting service accordingly with expansion in weekend service, additional weekday roundtrips, and new DTC service. CDOT will continue to explore expanded service as needed to respond to ridership demand.

Castle Rock and Castle Pines are notably not served by the current Bustang service and because neither town is within the RTD boundary, transit service for these areas is limited. Throughout the PEL Study (and prior), CDOT has been discussing Bustang service with Castle Rock and Castle Pines; both town officials and residents have expressed interest in short-term bus service and longer-term rail service, and if an appropriate location can be developed, CDOT would add the Castle Rock market to its service.

Expand Bustang Service: Managed Lanes that Allow Bus Travel

Lack of travel time reliability and longer travel times along I-25 between Colorado Springs and Denver adversely affects reliable transit use. The Denver Regional Council of Governments and Pikes Peak Area Council of Governments, along with the RTD and Mountain Metro Transit, regional planning efforts report high demand for regional transit and vanpool choices. The support for transit options is exhibited by growing ridership on CDOT's Bustang service. Bustang service operates in the general-purpose lanes along I-25 and is subject to the corridor's congestion, delay, and unpredictability. Providing reliability and schedule certainty for Bustang would likely attract and retain regular transit riders. Allowing transit use of improved highway facilities is an important supplemental element of the multimodal vision for the corridor, as viable transit options benefit the entire system by increasing the number of people served more efficiently.

CDOT has used managed lanes for more than a decade as a proven way to enhance capacity and travel time reliability, and encourage higher density travel (serving more trips with fewer vehicles) by promoting carpooling and transit use to reduce overall congestion by reducing the number of vehicles in the corridor. Managed lanes are especially effective for long, regional corridors like the I-25 PEL corridor that serve a high percentage of through trips where travelers can stay in the managed lane to arrive at their destinations at a predictable time. Bustang and other van pools benefit from the ability to use managed lanes to avoid congestion and keep reliable schedules. Users benefit from both improved and reliable travel times and the ability to work or do other tasks on the drive.

Through the PEL Study, CDOT advanced an EL for the Gap, in part because the EL provides these types of immediate transit benefits. The benefit of the Gap EL would be strengthened by the PEL recommendation to provide at least one managed lane in Segment 2 and Segment 3 to provide continuous managed lanes from Monument to C/E-470 that would be managed to provide a reliable speed on I-25. Consistent with Transportation Commission policy (resolution TC-15-10-5), Bustang buses would be able to use these lanes toll-free and provide a consistent speed and travel time reliability.

Expand Bustang Markets: New and Improved Stations or Parking

Improved Operations at Monument Bustang Park-n-Ride

Within the Study Area, Bustang provides service at Monument. A Park-n-Ride facility is located along Woodmoor Drive south of Palmer Lake High School. Bustang accesses the Park-n-Ride facility from the SH 105 interchange, and while the distance between the highway and Park-n-Ride is short, road access to the facility is circuitous and adds substantial time to the route for pick up and drop off. Improving travel times and access to and from this facility was identified by the PEL Study as an opportunity to improve transit service in the corridor, and the Level 1 evaluation recommended bus and pedestrian improvements for Bustang operations in

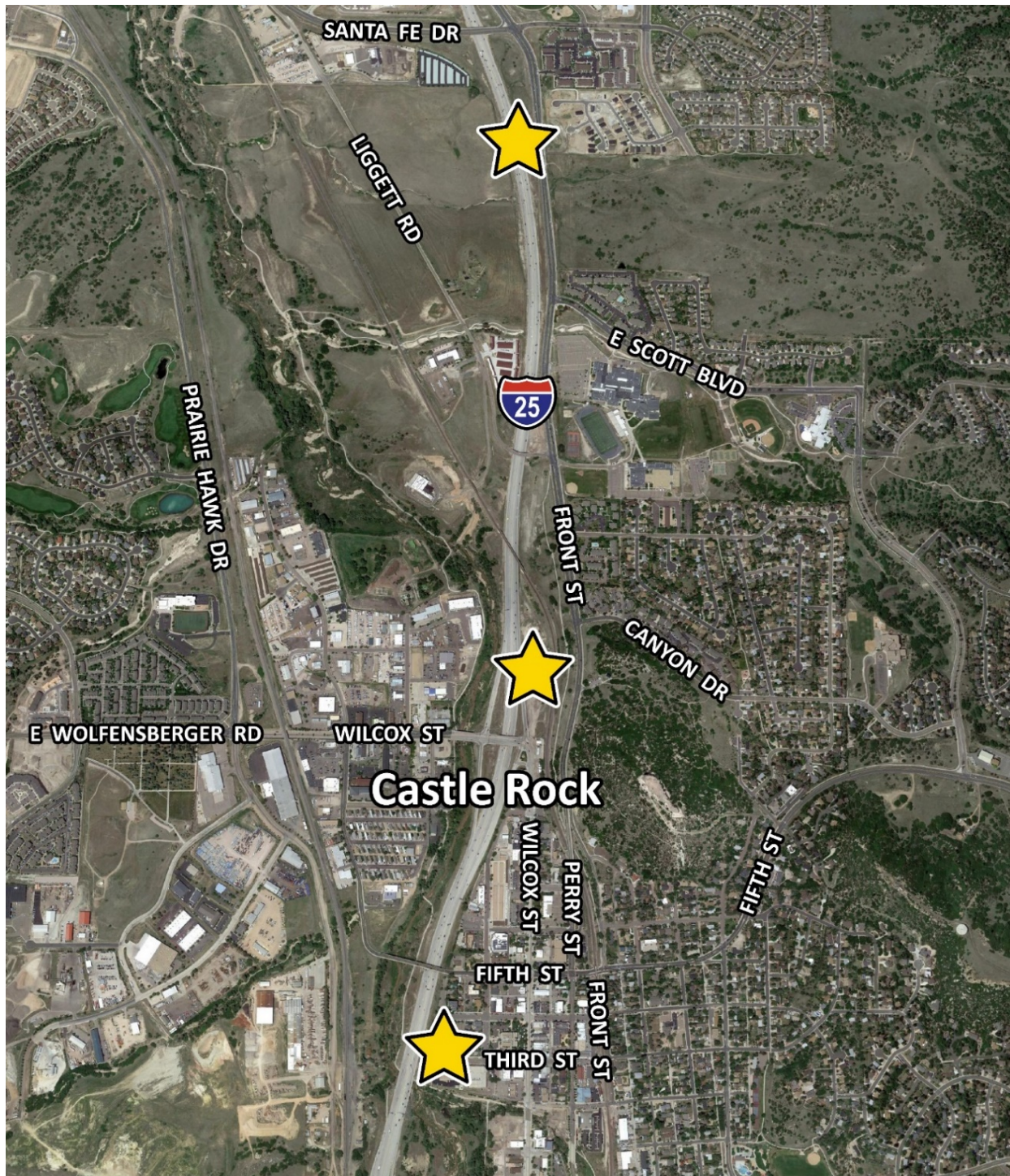
Monument. Subsequently, DTR, working with CDOT Region 2, developed a concept for constructing bus-only slip ramps into the Park-n-Ride and improving pedestrian access to the new slip-ramp Bustang stops to eliminate out-of-direction travel to the Park-n-Ride facility and instead have riders access the facilities through new or improved sidewalk facilities. DTR is evaluating this option further and began design and environmental clearance of an improved Monument transit stop in 2018 as an early action project. DTR estimates improvements to the Park-n-Ride will increase the efficiency of bus operations and reduce the passenger trip time by approximately 8 minutes or more each direction through the corridor.

Transit Station in Castle Rock

The Level 1 evaluation also recommended a new park and ride facility in Castle Rock to allow Bustang to provide service to Castle Rock. Because no transit facilities currently operate in Castle Rock, the PEL Study developed concepts for a Transit Station in Castle Rock that looked at general locations for transit (either bus or future) rail that could develop and evolve with additional study as part of the short- and long-term transit solutions in the corridor.

Three locations for transit stations in Castle Rock (Figure 5) were evaluated by CDOT: I-25/Wolfensberger Interchange, Castle Rock Douglas County Administrative Building/3rd Street, and the Walker/Pine Canyon property. Each of the locations has potential benefits, and all three station locations are carried forward in the PEL Study for future consideration when implementing expanded Bustang service and I-25 mainline improvements and/or Front Range passenger rail. The PEL Study is not recommending a specific station location. Future project development efforts by CDOT's DTR will determine a specific location and conduct additional analysis on parking, station configuration, required interchange modifications, access changes, ability to connect to future passenger rail service, and ability to phase station development. Attachment C summarizes the discussions to date between CDOT, developers, and representatives from Douglas County and Castle Rock regarding the various pros and cons of each of the three locations.

Figure 5. Potential Express Bus Transit Station Locations



Transit Alternatives Not Recommended

Add Passenger Rail Along Existing Freight Corridors

This alternative would provide passenger rail service between Denver and Colorado Springs on existing Burlington Northern and Santa Fe (BNSF) and Union Pacific Railroad (UPRR) freight rail lines. The existing freight lines generally parallel I-25 from Monument to Castle Rock and

parallel US 85 from Castle Rock to Littleton. However, because the lines diverge from the corridor at US 85, passenger rail service along these existing corridors would not serve the I-25 travel demand or destinations within the corridor, particularly the significant employment destinations in the DTC and other origins and destinations in the Denver South region. The result of the Level 1 evaluation of this transit alternative was a recommendation not to further study this alternative because it did not meet the purpose and need for I-25 improvements within the corridor. While the BNSF/UPRR lines generally follow I-25 in Segment 1, the alignment diverges from I-25 in Castle Rock, and commuter rail on these freight lines would not be able to serve the regional travel demand to the major employment centers in the Denver South area. The existing UPRR and BNSF lines bypass northern Castle Rock and Castle Pines, failing to serve either local or regional trips, and in Segment 3 the UPRR and BNSF lines have left the I-25 corridor and, instead, follow the US 85 corridor.

The PEL recommendation not to consider passenger rail service on existing freight rail lines is specific to the needs and travel demands for the I-25 corridor between Monument and C/E-470. This PEL Study did not recommend passenger rail on existing freight lines because of alignment issues and travel markets served; the PEL Study did not conduct further evaluation of whether such service would be viable based on available capacity, the condition of infrastructure and tracks, or feasibility of securing agreements with the private freight railroads to allow this service. Although CDOT is not recommending passenger rail along the freight corridors in the PEL corridor, the PEL recommendation supporting passenger rail on the I-25 alignment between Monument and C/E-470 would not preclude the Rail Commission from considering agreements with private railroads to allow passenger service on these lines as an interim or long-term option to serve the broader Front Range markets.

Extend Light Rail Transit South from Lone Tree

RTD operates bus and rail transit service in the Denver-Boulder metropolitan area, including the E/R/T Light Rail Transit (LRT) line along the Southeast Corridor, which runs along I-25 through Denver, currently terminating at the Lincoln Avenue station near C/E-470. The Southeast Extension is scheduled to open in May 2019 and will extend service to the new end-of-line station at RidgeGate. This alternative considered extension of LRT south along I-25 to Castle Rock or farther south.

As part of its FasTracks program, RTD includes both LRT and commuter rail technologies, depending on corridor conditions. LRT has smaller, lighter vehicles that can accelerate and decelerate quickly, making it a good choice for urban corridors. LRT has a top operating speed of about 55 miles per hour and limited on-board storage. Commuter rail can operate up to 79 miles per hour, and its larger, higher-capacity cars have more room for storage that make it more appropriate for longer distance rail lines.

LRT is not an ideal technology between RidgeGate and Castle Rock and even less appropriate south of Castle Rock due to the distance between stations, speeds, seating capacity, and steep grades in the corridor. Commuter rail, evaluated as part of the passenger rail alternatives, is a better technology for service between the Denver metropolitan area and Castle Rock, Monument, and Colorado Springs. The distances between the low-density developments between Castle Rock and Colorado Springs were not conducive to LRT, and LRT was

considered but eliminated as infeasible south of Castle Rock (although rail was considered as part of the recommended passenger rail on I-25 Alternative (Figure 2).

Extending RTD LRT from Lone Tree to Castle Rock was also not recommended in the PEL Study because of the distances and operational constraints. Although RTD's system also includes commuter rail, which is a more appropriate technology to extend rail service from Lone Tree to Castle Rock, Castle Rock is not part of the RTD service area and would be outside of RTD's scope. Although not recommended, the concept of extending RTD's rail service to Castle Rock is not eliminated. The PEL study does not preclude Castle Rock from rejoining RTD and requesting additional transit options. However, advancing transit service for Castle Rock through Bustang or future passenger rail, both of which are recommended, are likely more feasible next steps.

Add Bus Rapid Transit on Dedicated Facility

BRT is a bus transit system that typically includes dedicated bus lanes, traffic signal priority, and enhanced stations to provide fast efficient service. This BRT alternative would provide a dedicated lane on I-25 for BRT operations, and BRT vehicles would have flexibility to access destinations outside of the BRT facility on shared streets (unlike fixed rail alignments).

BRT provides little advantage over expanding Bustang service because providing a dedicated or semi-dedicated guideway and dedicated station stops offers less flexibility to serve broad travel needs, including transit (with station access), passenger cars, and freight. Expanding the existing Bustang service can provide the same level of reliability and mobility, through the operation of Bustang in managed lanes, which would be managed to maintain faster and reliable service. Dedicated BRT offers little advantage over enhanced bus service in a regional setting and this alternative was not recommended for further study.

References

- CH2M HILL Inc. (CH2M). 2014. Interregional Connectivity Study Final Report. January.
- . 2017. Interregional Connectivity Study Interoperability Evaluation Report. November.
- Colorado Department of Transportation (CDOT). 2018. Colorado Freight and Passenger Rail Plan. August.
- Regional Transportation District (RTD). 2014. Southeast Corridor Environmental Assessment. August.

Attachment A
PEL Study Transit Comment

Comment Code	Topic	Commenter	Comment	Comment Submitted
P- 6 -3	Transit	Jon Stapp	I would also like to see the Bustang make stops in Castle Rock. I really miss the FREX!!!	4/25/17 6:20 PM MT
P- 9 -1	Transit	Angela Dunn	Extend the light rail system to Castle Rock and south to Colorado Springs.	4/25/17 8:33 PM MT
P- 10 -1	Transit	BNSF Retiree	Consider an Amtrak test commuter train on freight railroad tracks, like Winter Park Express did - Suggest a week so there is a chance for weekday and weekend users to try it - Suggest it occur during January - March when Amtrak has a trainset already in Colorado - Amtrak would use it for Winter Park Express on Saturday and Sunday. It could be used for the test weekdays. If scheduled, the same trainset could also serve one weekend on the Colorado Springs-Denver corridor, just before or just after it goes into service for Winter Park Express	4/26/17 7:21 AM MT
P- 10 -2	Transit	BNSF Retiree	Company by the name of Diesel Motive Co, Matt Monson, out of Turlock CA, specializes in refurbished passenger locomotives. This might be a source for an inexpensive locomotive to start train service on a more permanent basis. The single track section of track between Palmer Lake and Monument is the most critical "gap" or limiting factor to passenger rail service along the southern Front Range	4/26/17 7:21 AM MT
P- 15 -1	Transit	vicky garrison	Put all available resources into a light rail, NOT expansion!	4/27/17 5:11 PM MT
P- 15 -2	Transit	vicky garrison	Please send me info on existing efforts to build a light rail. Thank you	4/27/17 5:11 PM MT
P- 20 -1	Transit	Tony Lopes	Passenger trains for daily commute.	4/27/17 5:56 PM MT
P- 25 -2	Transit	Judith Rice-Jones	Would prefer light or passenger rail.	4/27/17 6:51 PM MT
P- 38 -3	Transit	Carol Beckman	Bustang or services like that. Including accommodation for a nonmotorized trail when scoping out the right of way seems like a good idea. I don't think that adding rail lines would be cost effective. If the existing train tracks could also accommodate passenger trains, that would be fine, but new rail lines would be very expensive and I don't think they would be popular enough to justify the expense.	4/28/17 1:40 PM MT

Comment Code	Topic	Commenter	Comment	Comment Submitted
P- 43 -4	Transit	Vicki L. Kaufman	I believe more people would ride the bus if there were more designated park n rides available along I-25 for easy access to drivers, if there was another drop off in Denver, like the Broadway Stn light rail. I think there should be more information to the public regarding the benefits of riding the bus, for example, the wifi and restrooms, and not having to drive in bad weather, etc. There could be incentives to ride the bus, like 3 or 4 free rides for people with monthly passes. I commuted the "gap" for many years, as has my daughter, and know I would have ridden the bus back then if there were easy access park n rides. Since the light rail is scheduled for this section of I-25, I'm assuming to run adjacent to I-25, the land for the extra lanes and the park n rides would be more beneficial and less expensive than it will be in another 15 or 20 yrs, whenever the light rail is due to be constructed.	4/28/17 5:06 PM MT
P- 43 -6	Transit	Vicki L. Kaufman	I am a Colorado native and have been a commuter on this section of I-25 for years and so has my daughter. My family travels frequently on this section of I-25. If the bus had been available when I was commuting, I would definitely have used it. I think there needs to be a lot more information about the perks of riding the bus, and making more easy access park n rides available, like another one at Northgate and more between the downtown station & Woodmen, because people north of downtown dont want to backtrack or drive downtown.	4/28/17 5:06 PM MT
P- 49 -1	Transit	Stacy Bowen	Weekend transit service	4/29/17 8:38 AM MT
P- 49 -5	Transit	Stacy Bowen	Rail service along the corridor would be fantastic, but any improved transit options would be welcome, especially weekend service	4/29/17 8:38 AM MT
P- 55 -1	Transit	Megan Phillips	Increase mass transit opportunities w/park n' rides.	5/01/17 9:46 PM MT
P- 58 -1	Transit	Brad Monson	passenger rail	5/02/17 10:58 AM MT
P- 81 -1	Transit	Dale Backus	Less traffic, alternative public transport - train	6/01/17 9:36 PM MT
P- 81 -2	Transit	Dale Backus	We need anther highway to divert the through traffic and a train up a down corridor from Fort Collins to Pueblo and from Denver to Breckenridge/Vail is the best choice	6/01/17 9:36 PM MT
P- 105 -1	Transit	Lucinda Holehouse	Expand light rail. Roads should have been widened before all of these new housing projects were started. Planning, planning, planning!	6/09/17 7:09 AM MT
P- 111 -2	Transit	Brandy Stillman	Extending the light rail down to the Castle Rock area or beyond could go a long way to reduce congestion on the highway.	6/09/17 11:43 AM MT
P- 116 -1	Transit	christy simmons	though i like mass transportation, for the immediate future, we need more lanes	6/09/17 5:12 PM MT

Comment Code	Topic	Commenter	Comment	Comment Submitted
P- 124 -1	Transit	Smith Young	This is a CDOT request to assess the feasibility of rail service to alleviate the I-25 traffic between Denver and Colorado Springs. I believe CDOT should considered, not to duplicate previous studies. The objective of the assessment will be to alleviate traffic from I-25 south bound from Douglas County, not interfere with current planning to widen I-25.	2/14/17 4:38 AM MT
P- 124 -2	Transit	Smith Young	To begin, can you please provide a Colorado contact for BNSF rail lines? Has CDOT conducted any studies that include using the BNSF rail line for commuter service, and aside from cost and environmental issues, are there any regulations that would prohibit commuter trains sharing the rail line between the Littleton RTD light rail station and a Colorado Springs commuter rail station?	2/14/17 4:38 AM MT
P- 124 -3	Transit	Smith Young	I'm sure CDOT has statistics estimating the number of daily round trips between Colorado Springs and Denver. Before proceeding much further, can you please provide any estimates to include the following if you have it? - Date of the survey - Is the projected growth rate included - How often is the survey taken and when is the next one planned	2/14/17 4:38 AM MT
P- 124 -4	Transit	Smith Young	Another measure I'm reluctant to put on the table just yet, would be an estimate for the number of round trips between Colorado Springs and the Denver Tech Center that could justify an extension of RTD from Lone Tree to Castle Rock. Such an extension would be a much more long term solution than a short term point to point service between an existing RTD station, e.g., in Littleton and the construction of a passenger station somewhere in Colorado Springs. (The problem of the last mile for commuters has been expressed as a road block, however, the recent Uber phenomena could likely solve the local commute and parking problem in Colorado Springs.)	2/14/17 4:38 AM MT
P- 127 -1	Transit	City of Colorado Springs		2/13/17 11:13 AM MT
P- 130 -10	Transit	Meeting 2 Notepad Comments	A bustang stop is needed in Castle Rock	4/25/17 6:47 PM MT
P- 130 -12	Transit	Meeting 2 Notepad Comments	Consider train/ferry to move people and cars. Use existing rail lines. Consider the psychology and socio‐economics of transit use	4/25/17 6:47 PM MT
P- 130 -23	Transit	Meeting 2 Notepad Comments	Construct rail service; expand bus service; improve trail system; can't build your way out of congestion	4/25/17 6:47 PM MT
P- 132 -1	Transit	City of Colorado Springs	What about the use of existing freight track?	2/10/17 5:03 PM MT
P- 134 -8	Transit	Meeting 2 Roll Plot Comments	Mass transit COS to DEN	4/25/17 6:28 PM MT
P- 137 -1	Transit	Jonathan Schleifer	Traffic engineers have known since the 60s that you can't widen your way out of traffic congestion. Please focus your efforts on high speed rail instead of widening. Widening will only encourage the development of more car dependent communities and will never solve our traffic problems.	4/26/17 8:45 AM MT

Comment Code	Topic	Commenter	Comment	Comment Submitted
P- 148 -2	Transit	Merlin Klotz	Light rail is not a solution for commercial or out of state vehicles. Light rail is only an expensive option for a few people actually traveling between specific locations. There are no frontage roads to escape to. The solution is obvious and the excuses are plenty..	8/14/17 7:22 AM MT
P- 165 -2	Transit	Kelsey Thiessen	, and collaborate with the El Paso County on how to connect more bodies to more transportation options. (Light Rail)	10/18/17 11:46 AM MT
P- 181 -2	Transit	Sandi Ciz	Light rail would be beneficial for safety, convenience and decrease of cars on the road that contribute to environmental pollution.	11/30/17 10:17 AM MT
P- 181 -4	Transit	Sandi Ciz	2. LIGHT RAIL SYSTEM	11/30/17 10:17 AM MT
P- 206 -1	Transit	Bruce Purcell	Light rail from Colorado Springs	12/02/17 8:20 AM MT
P- 229 -2	Transit	Brian Young	I would also consider passenger trains.	12/02/17 12:11 PM MT
P- 255 -1	Transit	Steve Wallace	Light rail, autonomous vehicles	12/03/17 9:44 AM MT
P- 255 -2	Transit	Steve Wallace	Mandatory bus transportation for the Renaissance Festival. The Renaissance Festival traffic really tied up I25 both ways	12/03/17 9:44 AM MT
P- 257 -1	Transit	Philip Roy	Additional lanes, but I'd also love to see a passenger train from the east side of Colorado Springs to Denver.	12/03/17 11:20 AM MT
P- 281 -1	Transit	Carol Lavoie	Add passenger rail service	12/04/17 4:30 PM MT
P- 376 -2	Transit	Lauren Graham	A train would be a great option eventually, but widening the section of I-25 is a must that is far past due!	12/11/17 9:53 PM MT
O- 35 -1	Transit	The Colorado Springs Company	Look at all possible alternative methods of travel. Not just passenger rail service, but look at non-traditional options, such as monorail service. Monorails, while popular in the East and an efficient, electric means of transportation, are seen as "whimsical" in the West. A two-beam monorail line could be installed high over the medians of I-25 without too much interference with existing infrastructure.	4/28/17 9:51 AM MT
NA	Transit	Comment form response	need commuter rail	Jan 2017 meetings
NA	Transit	Comment form response	Transit is practically absent to the discussion of this project and an absolute fatal flaw. Induced demand will fill any expansion in just a few years and we will be having the same conversation again. Bustang needs to serve the corridor better with stops at RidgeGate, Lincoln, or Castle Rock at a minimum. Fund with tolls and encourage the use of transit instead of forcing south Denver residents to drive.	Jan 2017 meetings
NA	Transit	Comment form response	Don't preclude future passenger rail options - high capacity, competitive costs and available right of way.	Jan 2017 meetings
NA	Transit	Comment form response	The Amtrak ski train is not being used on the weekdays. Let's use it in our corridor during the week on existing tracks. We could get Federal money for that. We could also reroute the train from LA to Chicago to go over Raton Pass that could then hook in with our corridor.	Jan 2017 meetings
NA	Transit	Comment form response	You need to have CDOT do PEL study for roads and commuter rail.	Jan 2017 meetings

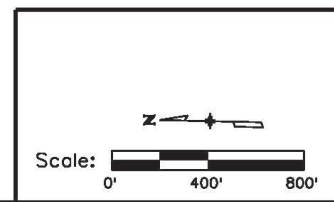
Comment Code	Topic	Commenter	Comment	Comment Submitted
NA	Transit	Comment form response	Need to add light rail to study.	Jan 2017 meetings
NA	Transit	Comment form response	Must fix Gap but must plan for future public transit COS to DEN and solve last mile problem.	Jan 2017 meetings
NA	Transit	Comment form response	CDOT appears to focus entirely on highway expansion of I-25, without any consideration of the nearby railway corridor along the same route. More lanes do not reduce the number of motor vehicles on the road, and eventually, the I-25 corridor will no longer be able to accommodate intercity traffic, no matter how many lanes are added. This has been the experience in Los Angeles County, which is one of the major reasons my wife and I retired to Colorado Springs in 2015.	Jan 2017 meetings
NA	Transit	Comment form response	The solution to this problem is that any long-range transportation plan needs to include passenger rail systems. Passenger rail is the safest, most efficient mode of ground transportation, and these systems deliver much better service than highways to commuters.	Jan 2017 meetings
NA	Transit	Comment form response	But, passenger rail systems take time to plan and construct. So, unless we start including them in our plans now, we will become the next Los Angeles, a city that is now spending billions upon billions of dollars to undo the mistakes of relying on highways. For the benefit of the People of Colorado, I urge you to include passenger rail systems in addressing the future transportation needs connecting the state's two largest cities, Denver and Colorado Springs. Otherwise, real solutions to our highway congestion will never happen!	Jan 2017 meetings
NA	Transit	Comment form response	One does <i>*not*</i> reduce traffic congestion by making driving <i>*more*</i> attractive. One reduces traffic congestion by making <i>*alternatives*</i> , like light rail, <i>*more*</i> attractive. That will attract people to alternatives to driving.	Jan 2017 meetings
NA	Transit	Comment form response	I think extending rail south from south Denver to the Springs or even to park and rides further south than they are now would be great.	Jan 2017 meetings
NA	Transit	Comment form response	I'm 75 years old, and not as reliable a driver as before. By the time this project is built I'll be still <i>*less*</i> reliable. I need passenger rail alternative now, and will need it more in my 80s.	Jan 2017 meetings
NA	Transit	Comment form response	CDOT should be doing their PEL studies also for passenger rail so we are ready when population of Colorado Springs doubles in 2040.	Jan 2017 meetings

Attachment B
ICS Conceptual Rail Alignment and
Stations: C-470 to Briargate



LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location

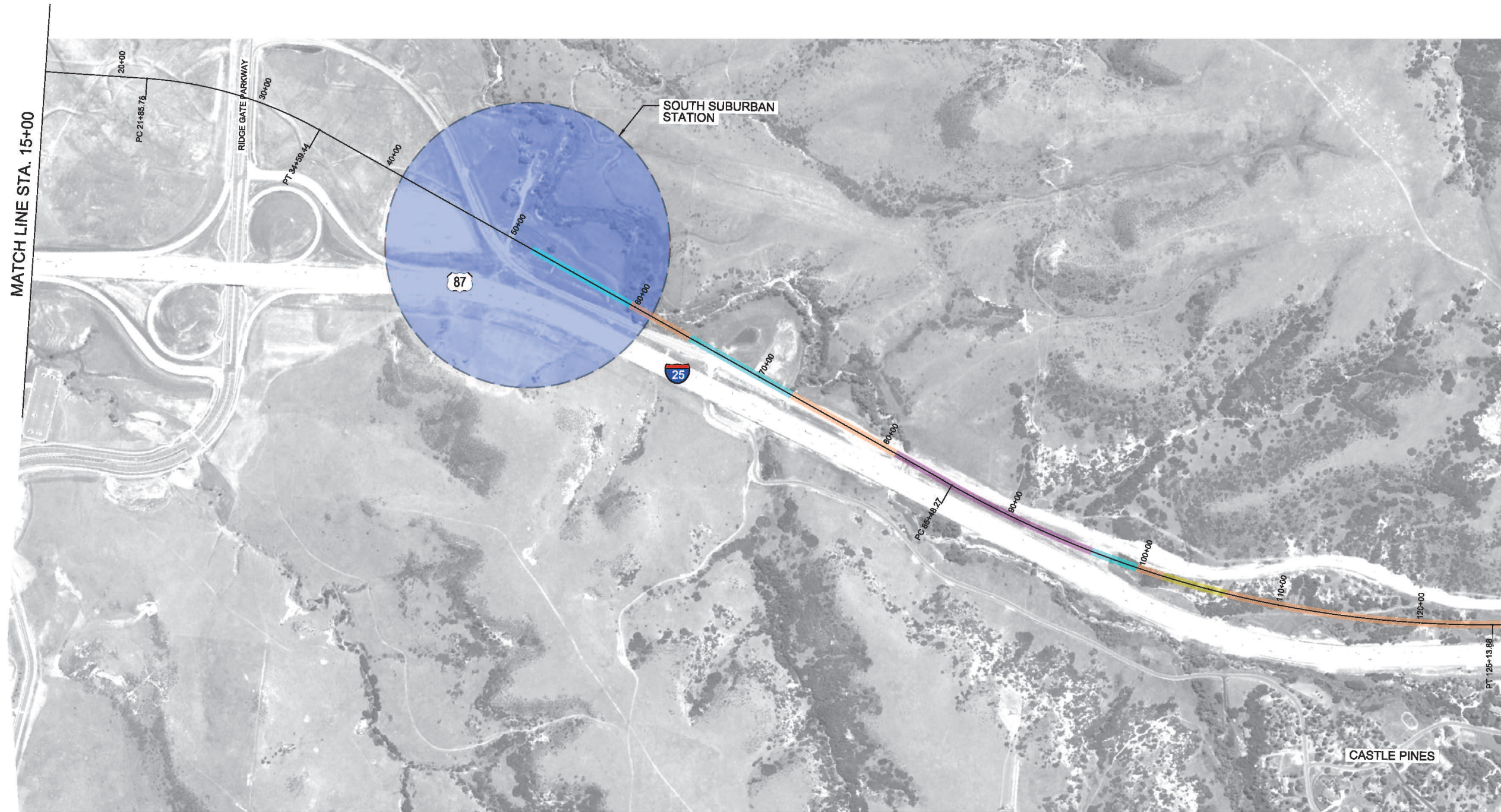


Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
(1 of 51)**

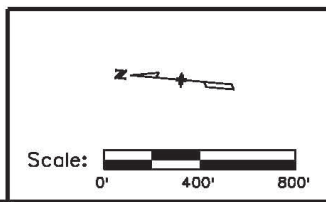
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S-3-1



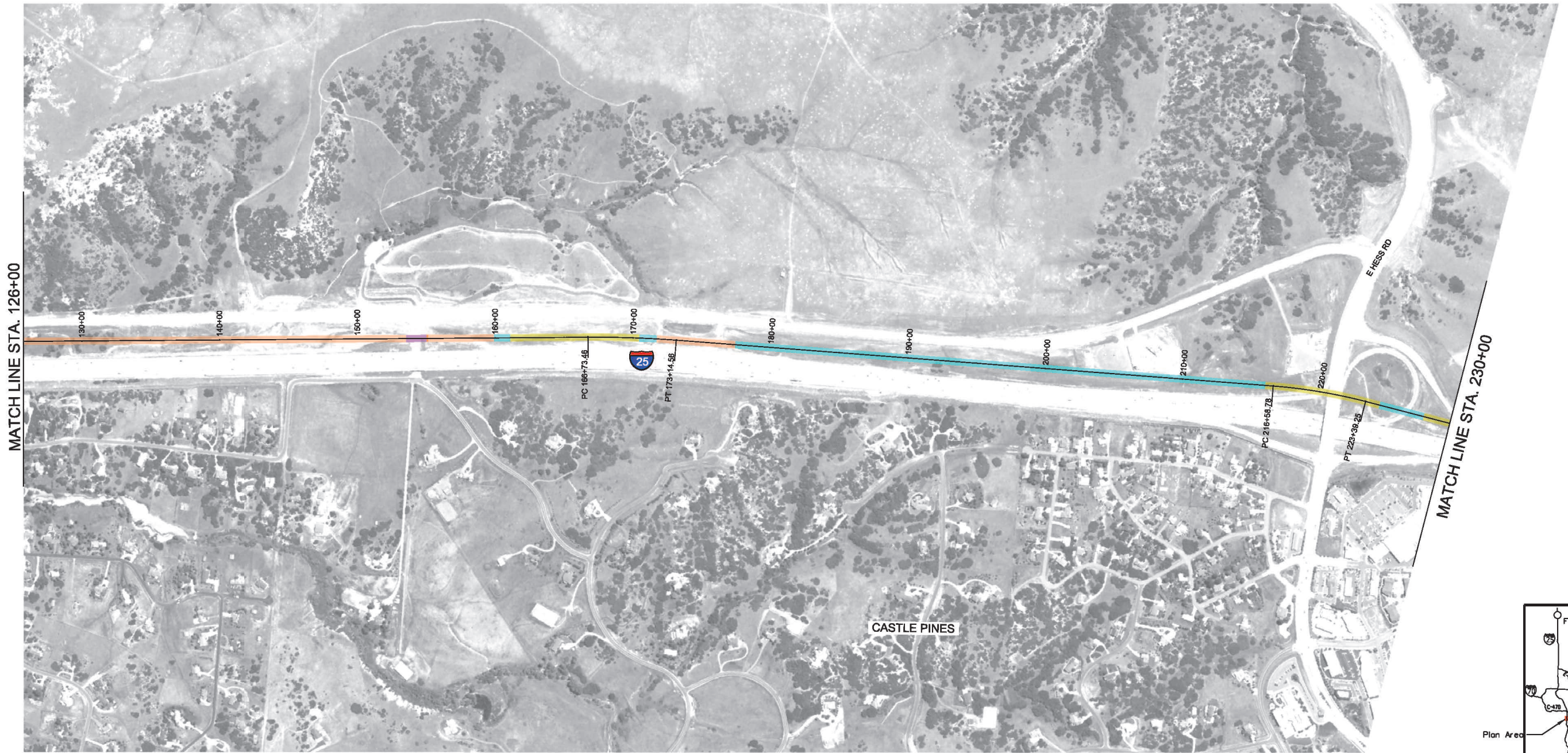


LEGEND

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- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location

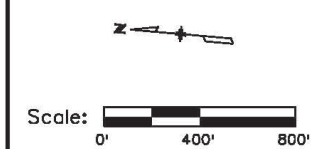


Project Name: Interregional Connectivity Study	Figure: S-3-2
Title: Segment S-3 Plan (2 of 51)	



LEGEND

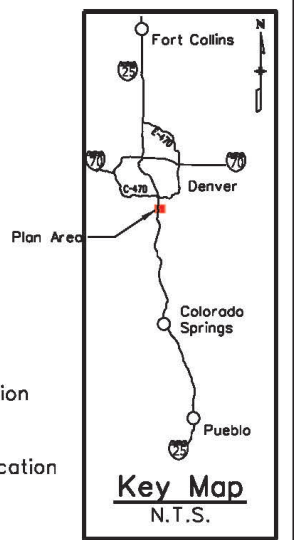
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- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location

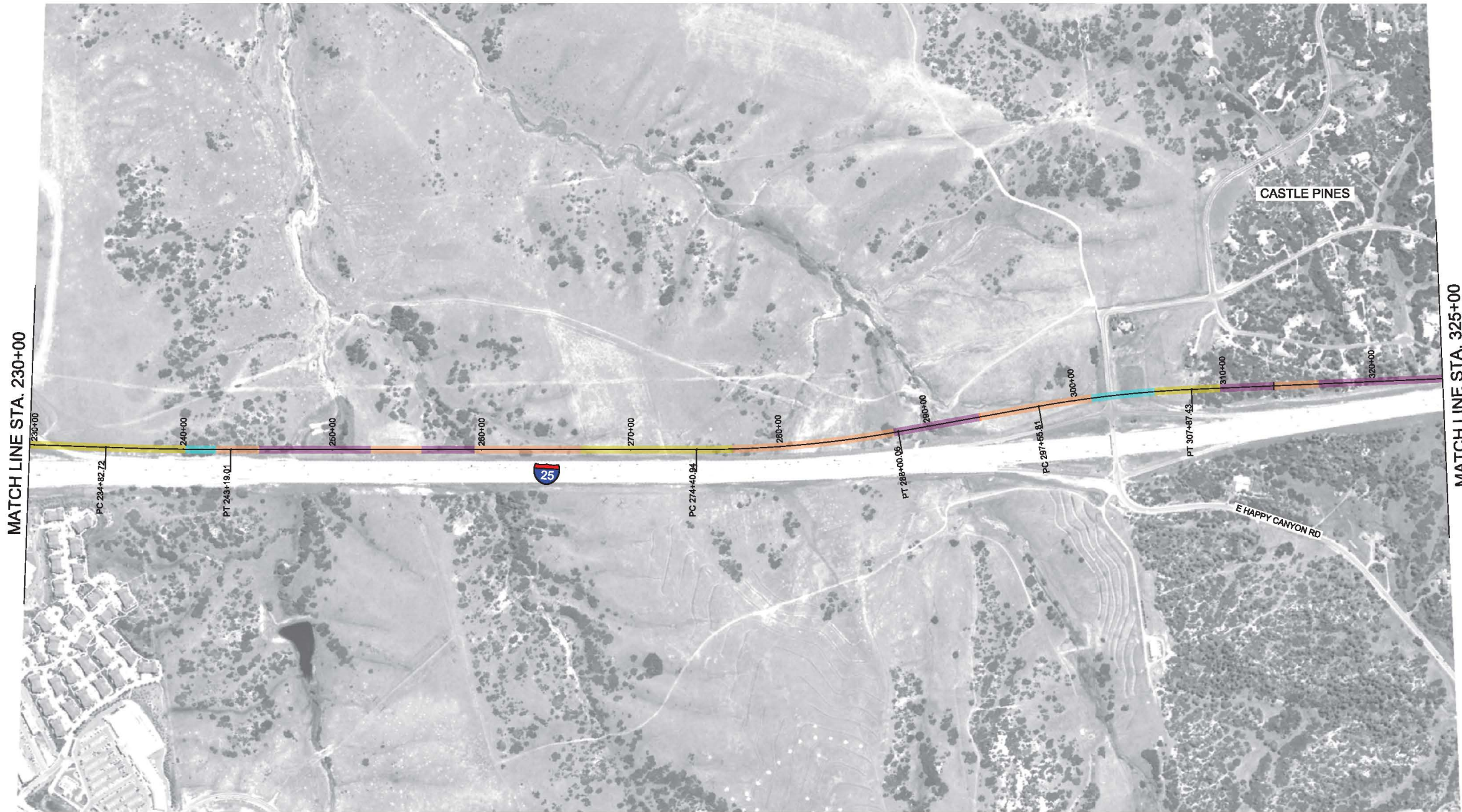


Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
 (3 of 51)**

Figure:
S-3-3





LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel



Primary Station Location



Secondary Station Location



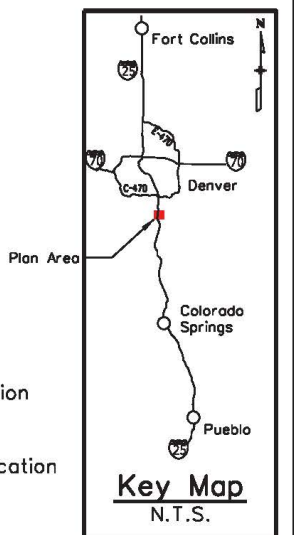
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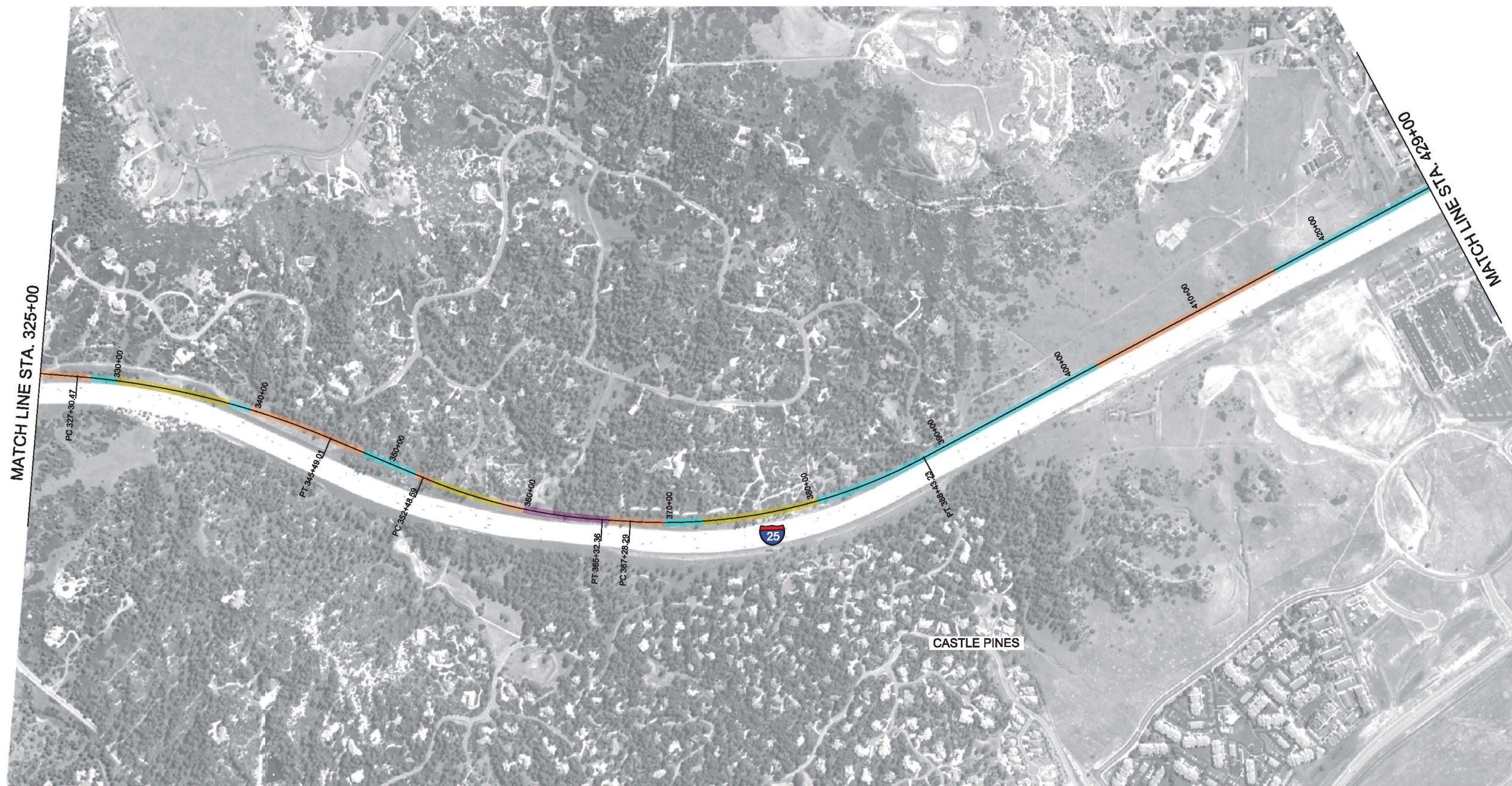
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Title:
**Segment S-3 Plan
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Figure:

S-3-4

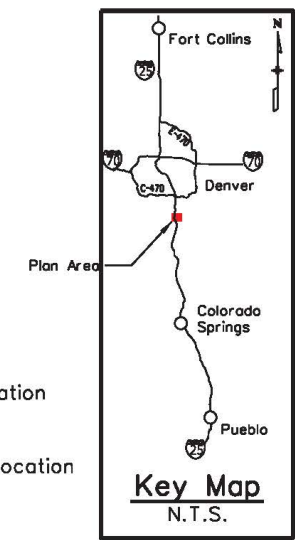




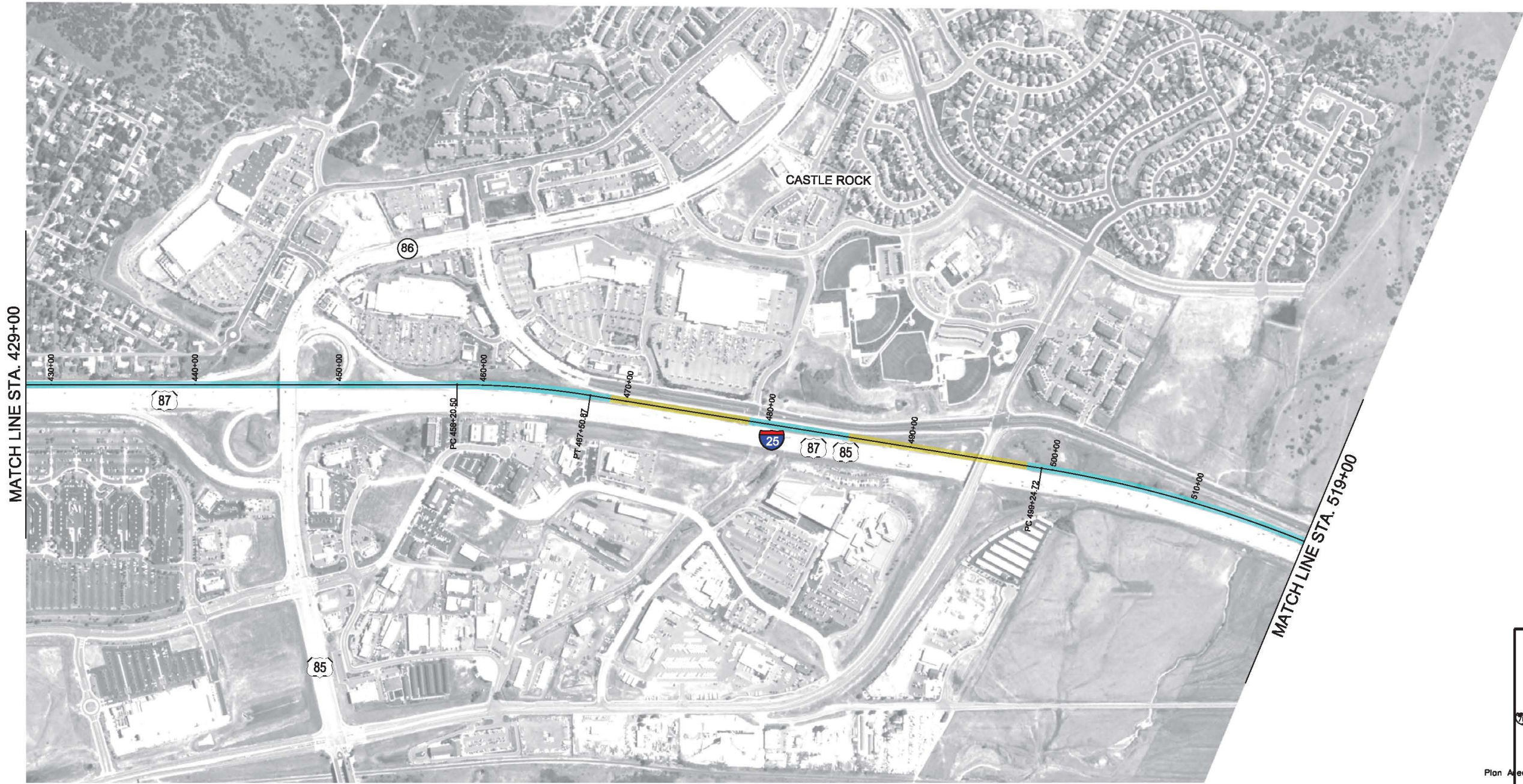
CASTLE PINES

LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



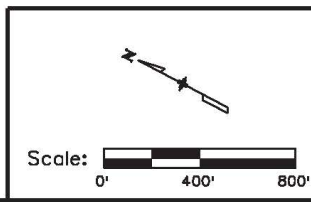
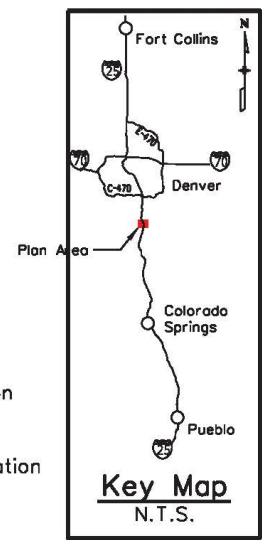
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	Title: Segment S-3 Plan (5 of 51)	



LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel

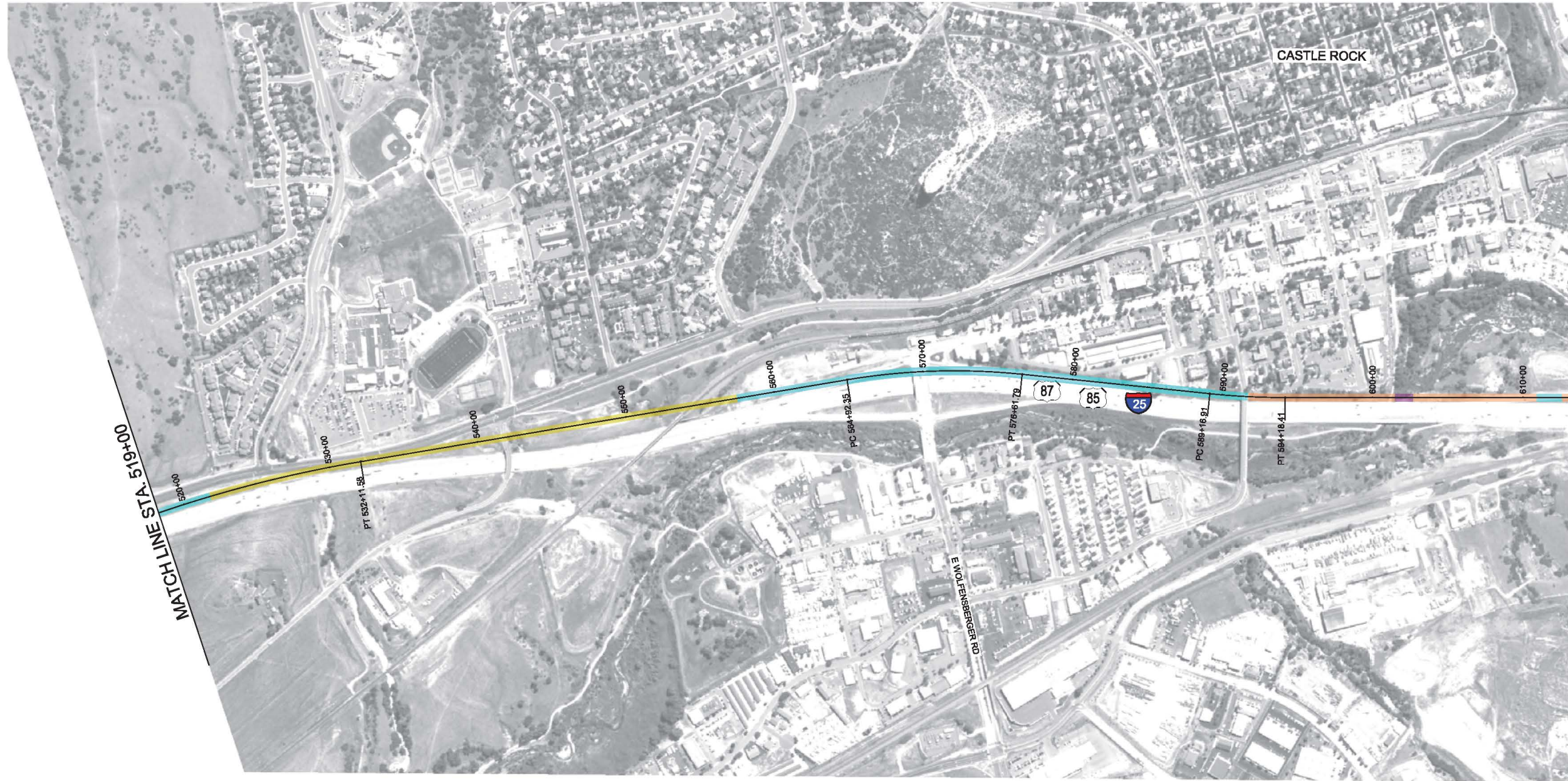
- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
 (6 of 51)**

Figure:
S-3-6



LEGEND

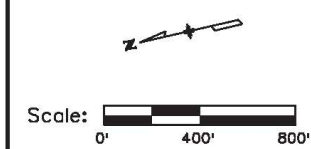
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- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel



Primary Station Location



Secondary Station Location



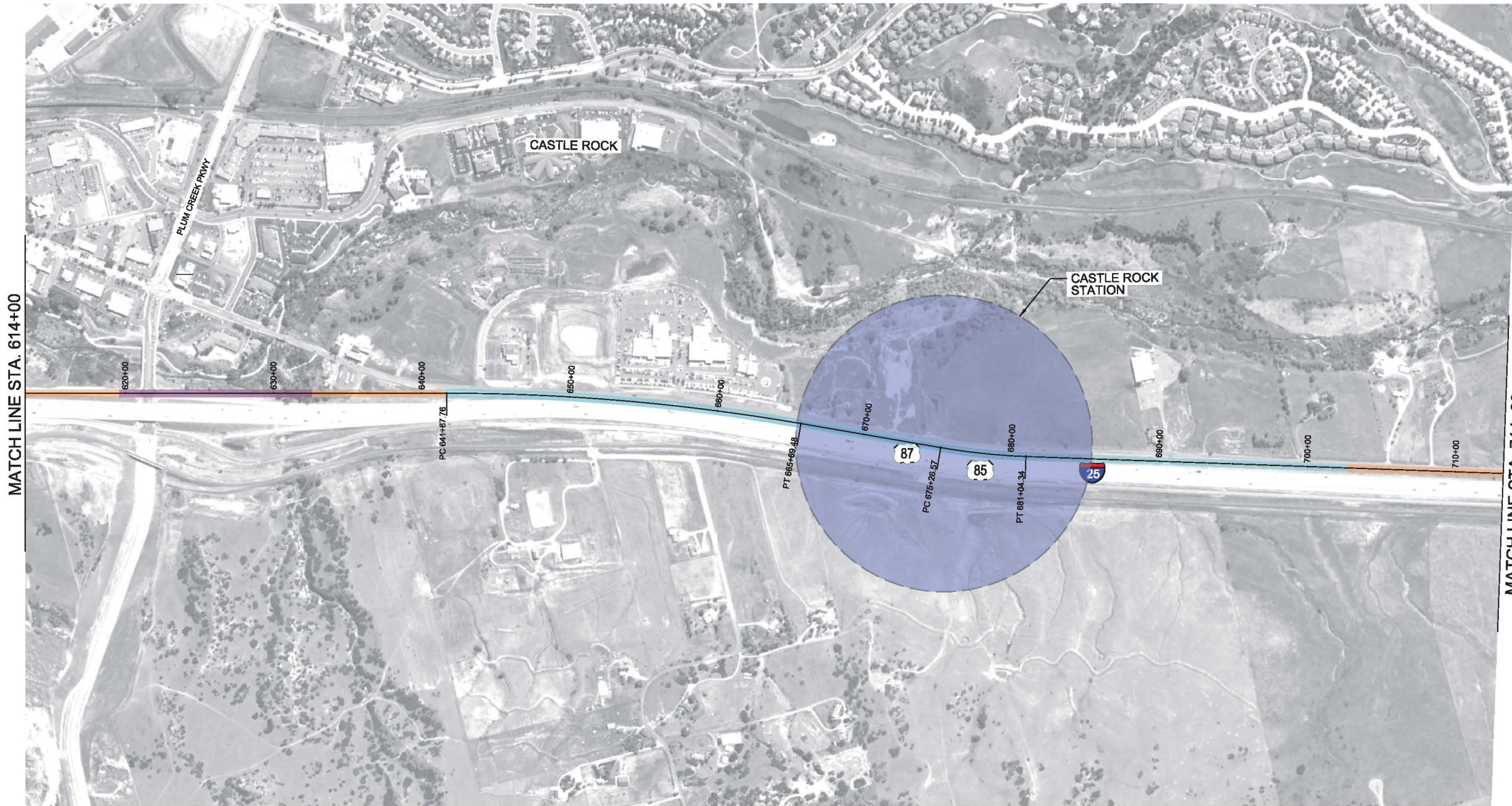
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Title:
**Segment S-3 Plan
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Figure:

S-3-7



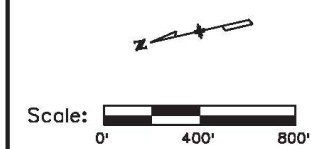


LEGEND

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- Elevated
- Retained Cut
- Tunnel



- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
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Figure:
S-3-8

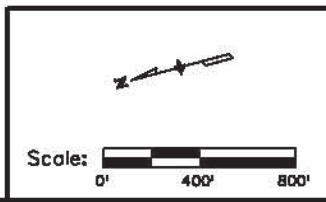


MATCH LINE STA. 714+00

MATCH LINE STA. 817+00

LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
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Figure:
S-3-9



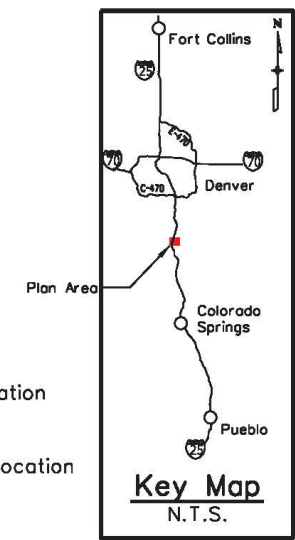
MATCH LINE STA. 817+00



MATCH LINE STA. 919+00

LEGEND

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- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



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	Title: Segment S-3 Plan (10 of 51)	

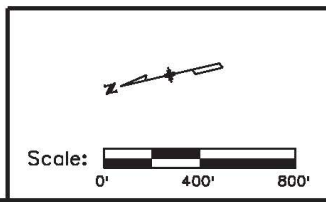


MATCH LINE STA. 919+00



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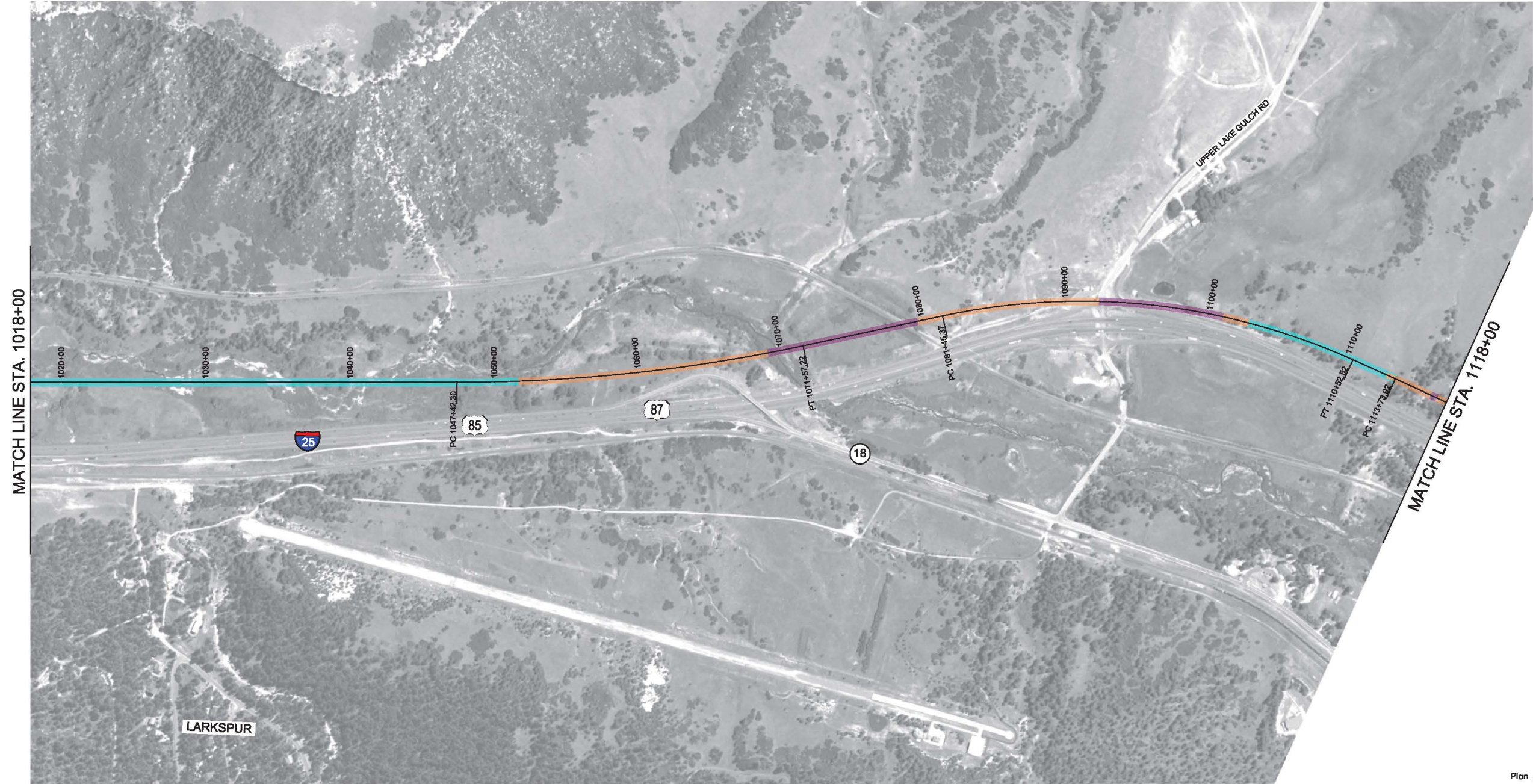
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- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

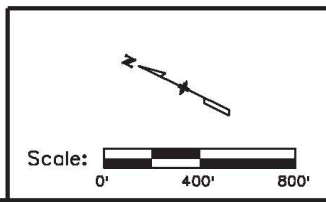
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**Segment S-3 Plan
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Figure:
S-3-11



LEGEND

- At Grade
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- Tunnel
- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

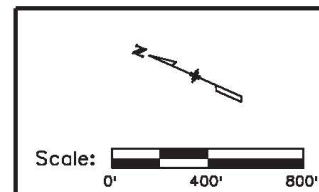
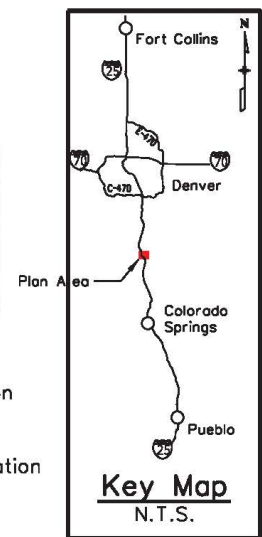
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**Segment S-3 Plan
 (12 of 51)**

Figure:
S-3-12



LEGEND

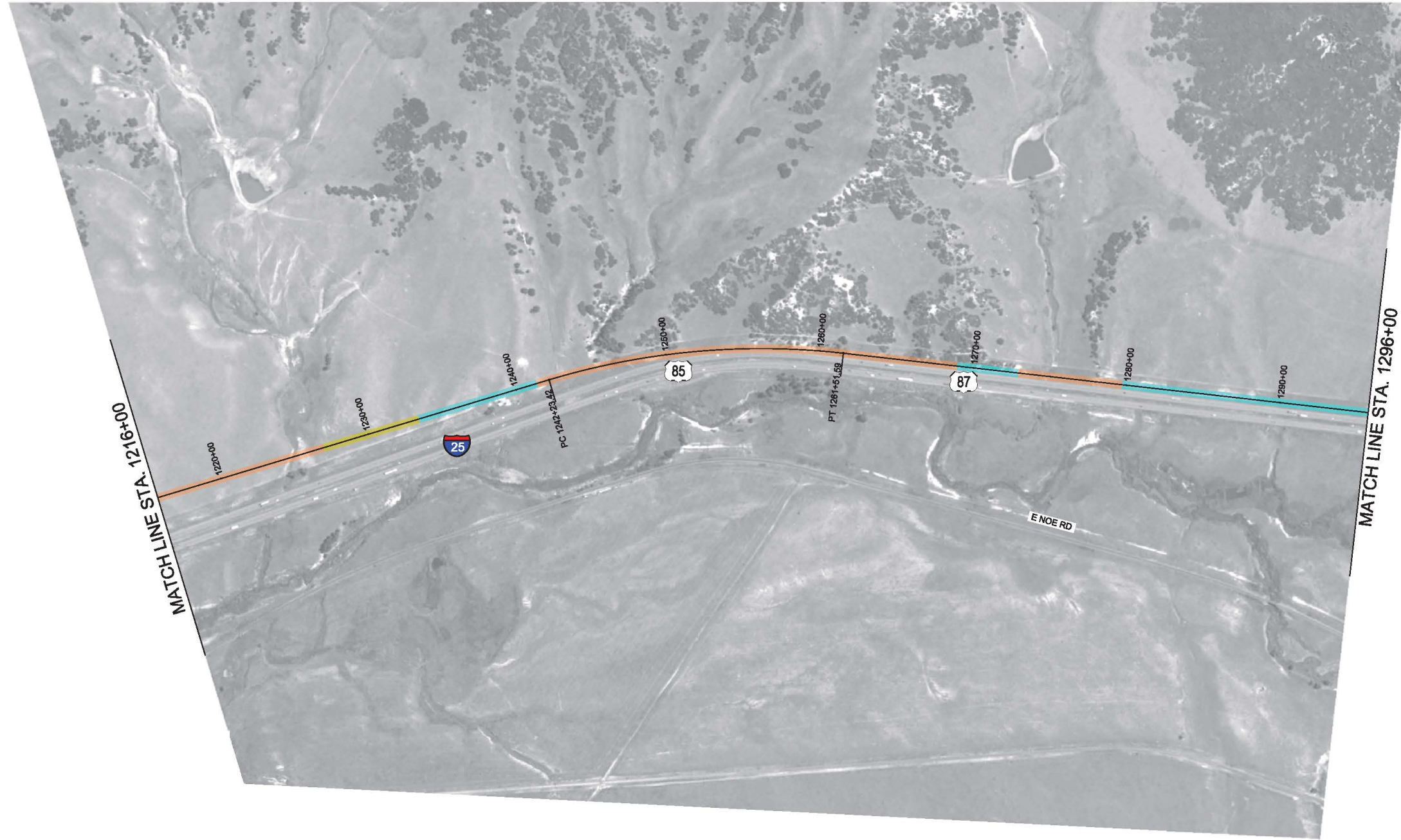
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- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
 (13 of 51)**

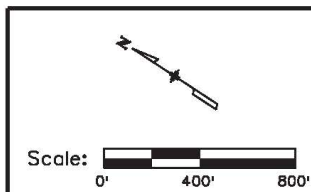
Figure:
S-3-13



LEGEND

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- Elevated
- Retained Cut
- Tunnel

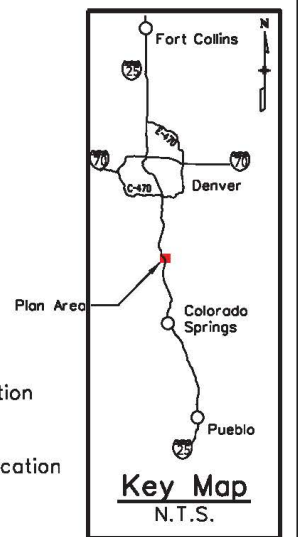
- Primary Station Location
- Secondary Station Location

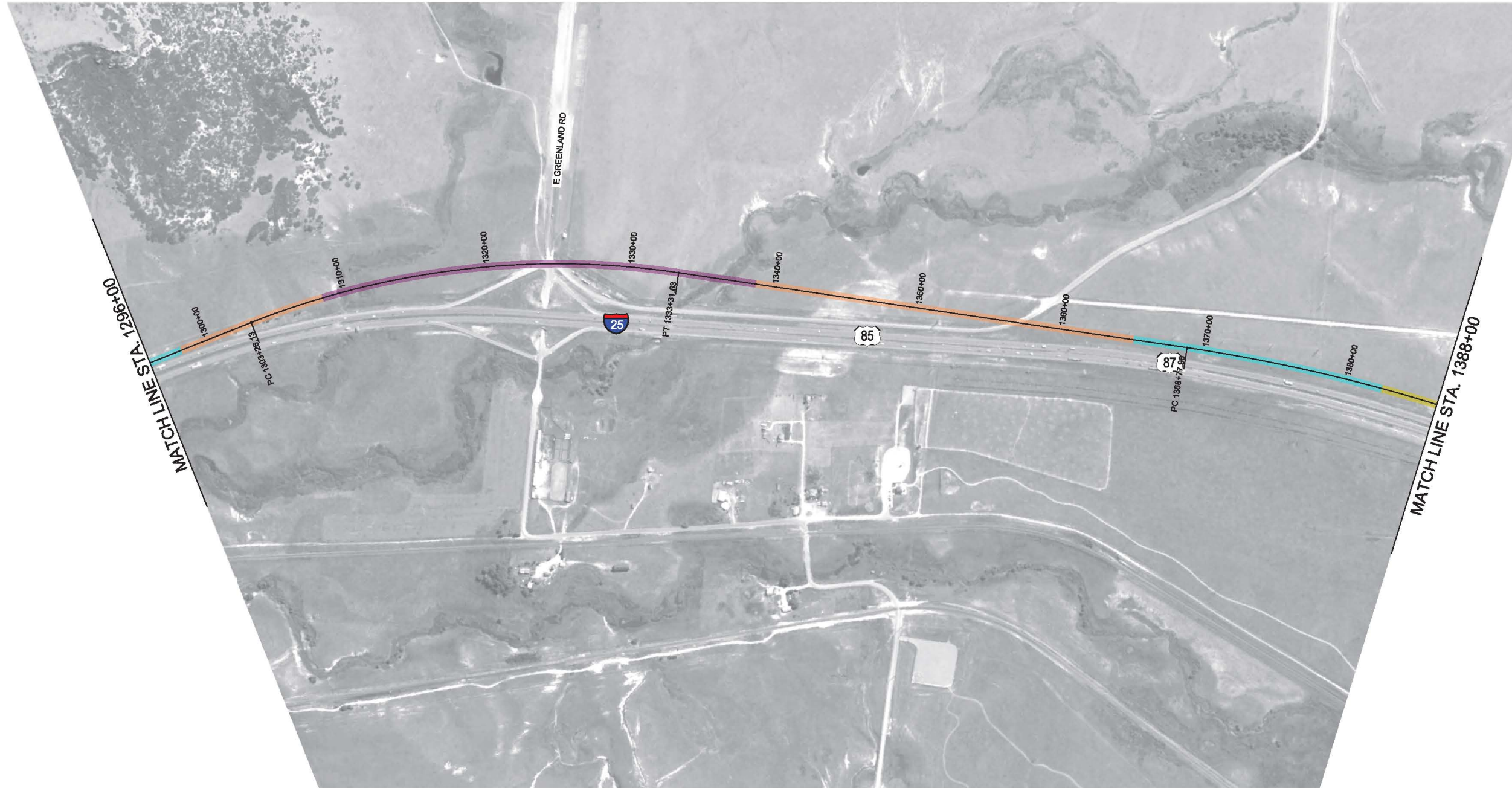


Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
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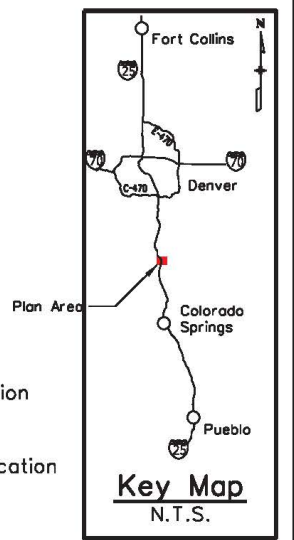
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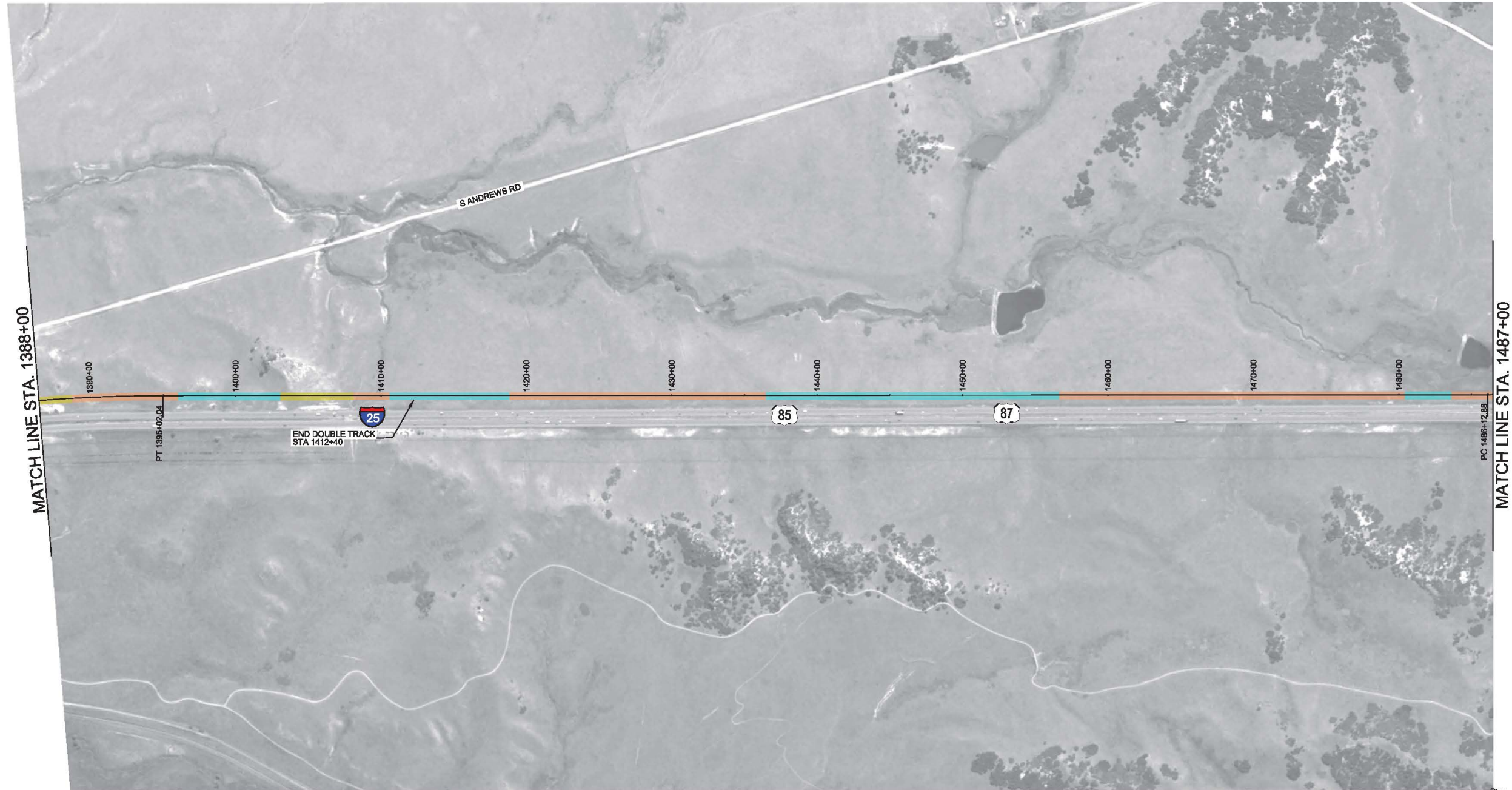


LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



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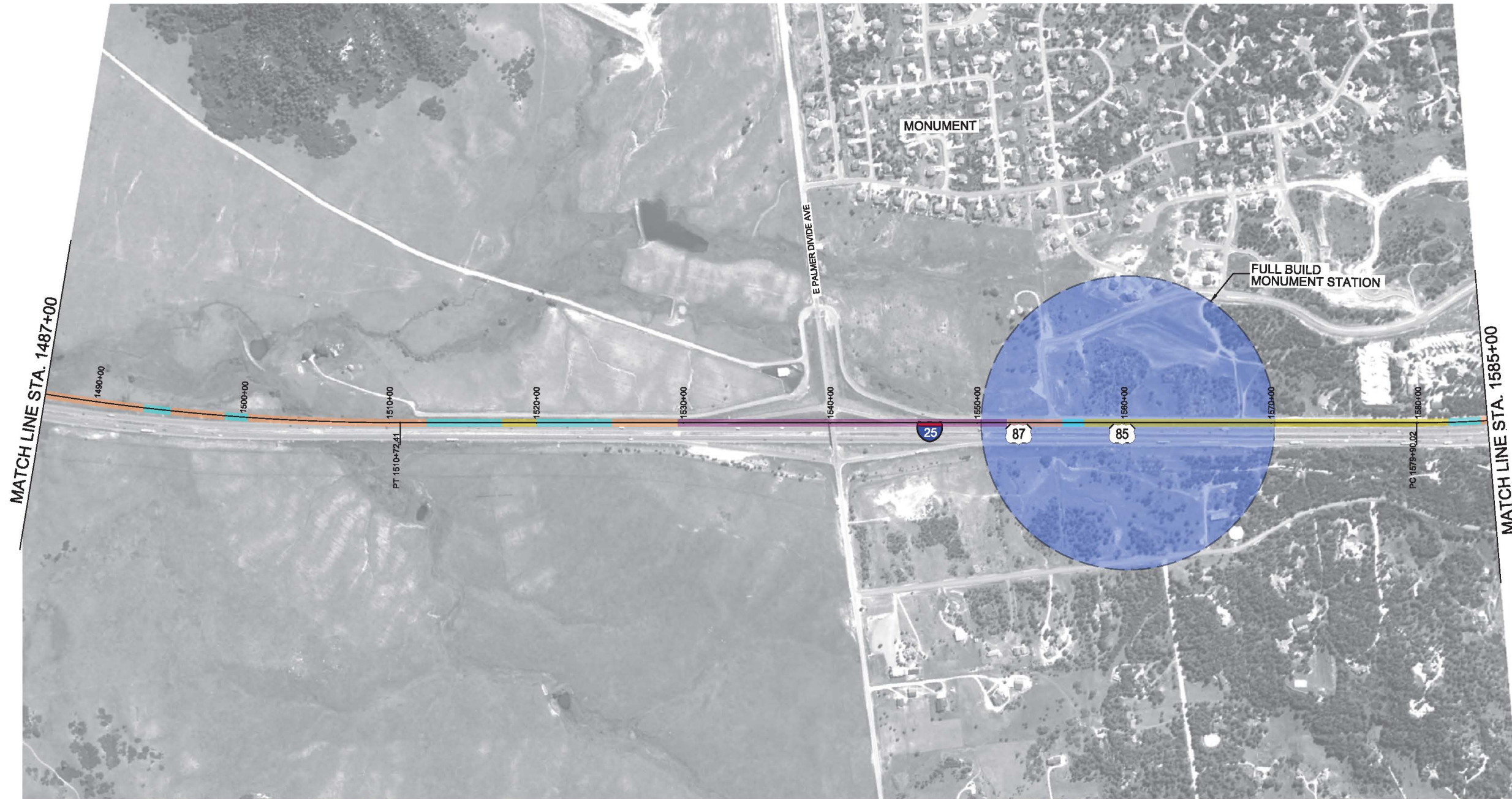


LEGEND

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- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



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	Title: Segment S-3 Plan (16 of 51)	

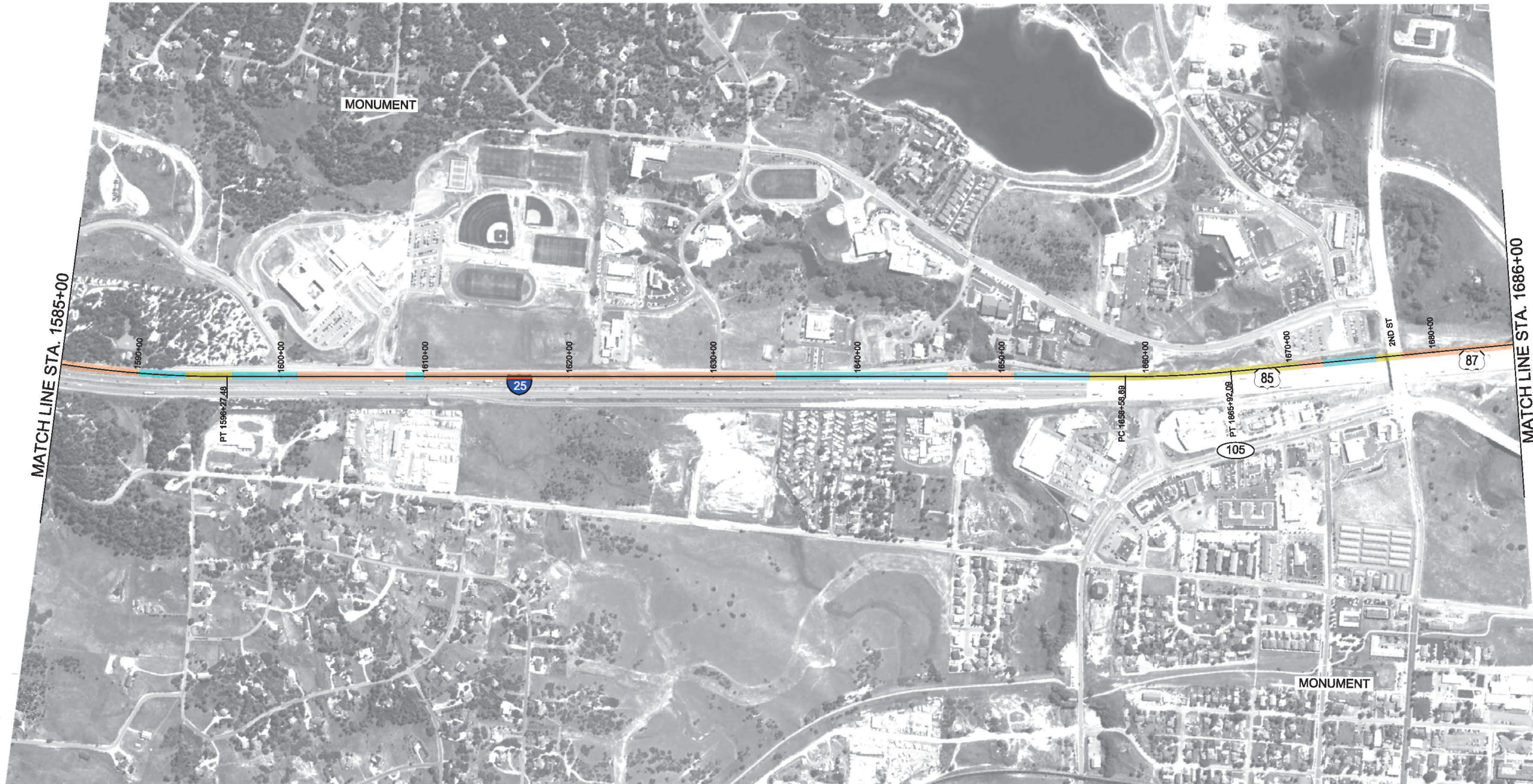


LEGEND

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- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location

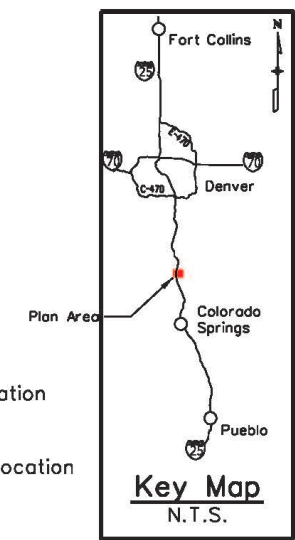


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	Title: Segment S-3 Plan (17 of 51)	



LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
(18 of 51)**

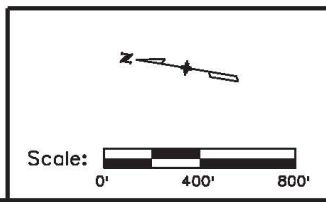
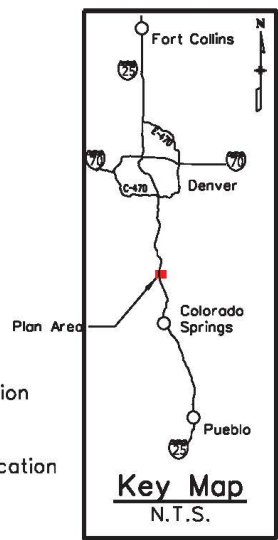
Figure:

S-3-18



LEGEND

- At Grade
- At Grade W/ Cut & Fill
- Retained Fill
- Elevated
- Retained Cut
- Tunnel
- Primary Station Location
- Secondary Station Location



Project Name:
Interregional Connectivity Study

Title:
**Segment S-3 Plan
 (19 of 51)**

Figure:
S-3-19

Attachment C
Transit Station Location Comparison
Technical Memorandum

Comparison of Potential Transit Station Locations

I. Purpose of Memorandum

The purpose of this memorandum is to document discussions between the Colorado Department of Transportation (CDOT), the Walker Property/Pine Canyon developer, and municipal representatives from Douglas County and the Town of Castle Rock regarding the potential future location of a bus transit station in Douglas County. This draft memorandum summarizes the various pros and cons of each of the three locations assessed to date based on conceptual designs and is not intended to conclude with a singular recommendation or a specific transit station location.

II. Participants in Discussion

The following individuals participated in these meetings and/or provided input through correspondence or direct communication with CDOT staff:

Chuck Attardo	CDOT	Tom Reiff	Town of Castle Rock
Carrie DeJiaco-Wiedner	CDOT	Tara Vargish	Town of Castle Rock
Lesley Mace	CDOT	Dan Sailer	Town of Castle Rock
Roman Jauregui	CDOT	Kurt Walker	Pine Canyon
Mike Timlin	CDOT - DTR	Jim Walker	Pine Canyon
Sharon Terranova	CDOT - DTR	Kevin Thomas	Pine Canyon
Dave Krutsinger	CDOT - DTR	John Prestwich	PCS Group
Jeff Sanders	CDOT - DTR	Kurt Kolleth	Jacobs
Daniel Eybs	For CDOT – DTR	Chris Bisio	Jacobs
Emeka Ezekwemba	FHWA	Jeff Berna	Jacobs
Art Griffith	Douglas County	Ed Parks	AECOM
Bob Goebel	Town of Castle Rock		

Note:

DTR Department of Transit and Rail
 FHWA Federal Highways Administration

III. Summary of Findings

- Based on a conceptual level of engineering design, there are no red flag issues for any of the three transit station location options considered at the Interstate 25 (I-25)/Wolfensberger Road interchange, Douglas County Administration Building/3rd Street, or the Walker/Pine Canyon property.
- Each of the three transit station locations have relative benefits and challenges, and will be evaluated in this memo based on the following issues and opportunities:
 - Land availability
 - Connectivity
 - Traffic impacts
 - Bustang efficiency
 - Cost
 - Ability to turn buses around within Castle Rock
 - Phased development opportunity
 - Ultimate build out potential



DRAFT MEMORANDUM

- CDOT currently does not have funding identified for a transit station at any of these three locations.
- All three transit station locations will be carried forward in the I-25 South Planning and Environmental Linkages (PEL) Study as Supplemental Elements and considered when assessing I-25 mainline improvement alternatives.

Figure 1. General Map of the Three Potential Transit Station Locations



IV. Douglas County Admin. Building/3rd Street Location

- The Douglas County Administration Building/3rd Street option would require new slip ramps on and off I-25 to access the proposed transit station.
- The parking structure would be located on the east side of I-25, within Castle Rock.
- Parking for the station could possibly be built on municipal property and accommodate additional Douglas County parking needs.
- Pedestrians unloading from the southbound I-25 slip ramps would access the parking structure by way of the existing Plum Creek Trail underneath I-25.

Figure 6. Douglas County Administration Building/3rd Street Location



Table 1. Pros and Cons of Douglas County Administration Building/ 3rd Street Location.

Issue/Opportunity	Douglas County Administration Building/3rd Street Location	
Land Availability	Pros	<ul style="list-style-type: none"> • Relatively minor right of way (ROW) acquisition needed to accommodate the near term improvements.

	Cons	<ul style="list-style-type: none"> County will need to reconfigure existing expansion plans to accommodate bus stop and parking spaces for near-term and long-term transit station improvements.
Connectivity	Pros	<ul style="list-style-type: none"> Existing access is adequate via Fifth Street and local network, as well as good access to Plum Creek Trail. Could provide direct transit service to Douglas County and Castle Rock governmental services.
	Cons	<ul style="list-style-type: none"> Access exists but is poor because of challenges getting to station location by traveling on low speed collectors with on street parking.
Traffic Impacts	Pros	<ul style="list-style-type: none"> As downtown redevelopment within Castle Rock continues with multifamily residential and mixed-use development, a downtown transit facility would be within walking distance. Currently, over 700 units are being constructed with many more on the horizon. Provides potential ability to use for Town/County downtown events during off peak transit weekends.
	Cons	<ul style="list-style-type: none"> Traffic to the station location must travel through downtown on low speed collector streets and introduces higher volumes of traffic to an already congested business district.
Bustang Efficiency	Pros	<ul style="list-style-type: none"> Northbound onramp allows for high efficiency of bus operations.
	Cons	<ul style="list-style-type: none"> Buses must run through Plum Creek Parkway interchange, adding delay (although this delay may be negligible). There is inadequate distance for proper weave conditions between Plum Creek Parkway and Wolfensberger Road.
Cost	Pros	<ul style="list-style-type: none"> Can use the existing Plum Creek Parkway pedestrian underpass to connect northbound and southbound service.
	Cons	<ul style="list-style-type: none"> Constrained ROW may limit viability in near/long term – at minimum would require a customized acceleration/deceleration lane that provides safe weaving conditions for buses. Additional modification of the trail and/or access off the trail to the station will likely encounter challenges in meeting Americans with Disabilities Act (ADA) compliant grades. For long-term parking needs, a multi-leveled parking structure would be required at this location, impacting existing and planned business development. This may also be considered a ‘pro’ if a P3 (public-private partnership) partner can be found to take on some of this cost.
Ability to Turn Buses Around within Castle Rock	Pros	<ul style="list-style-type: none"> Buses can use existing interchanges to turn around for Castle Rock-only buses.
	Cons	<ul style="list-style-type: none"> None identified.
Phased Development Opportunity	Pros	<ul style="list-style-type: none"> Supporting road network in place, much of the improvements can be accommodated within either CDOT ROW or possibly through partnerships with Douglas County.
	Cons	<ul style="list-style-type: none"> Opening the transit station in the near term could prove difficult with all the challenges and timing of the County’s expansion plans.
Ultimate Build Out Potential	Pros	<ul style="list-style-type: none"> Long-term transit station could provide transit-oriented development opportunities. Good partnership opportunity with Douglas County and Castle Rock. Could entice a P3 with a mixed use residential/commercial building that also has governmental offices.

	Cons	<ul style="list-style-type: none">• Likely to preclude and/or adversely affect current development plans in Castle Rock.• Does not appear to accommodate future rail connection.
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V. Wolfensberger Road Interchange Location

- The Wolfensberger Road interchange option would consist of a new roundabout at the junction of the I-25 northbound onramp and Wolfensberger Road to provide access in and out of the proposed transit station.
- The transit station would be constructed on an existing vacant CDOT-owned property.
- The roundabout would also address existing safety problems at this intersection. Note that in recognition of these existing safety issues, CDOT and Castle Rock have developed other ideas to improve safety at this intersection.
- To create enough space for the roundabout design, Castle Rock would acquire the parcel containing the gas station currently located on the east end of the I-25 ramps. Castle Rock is interested in acquiring this parcel to address the safety issues regardless of its potential for a transit station.
- By acquiring the gas station parcel (highlighted in yellow on Figure 2), there is sufficient space that an additional lane can be added to meet future capacity needs when warranted.

Figure 2. Wolfensberger Road Interchange Option.

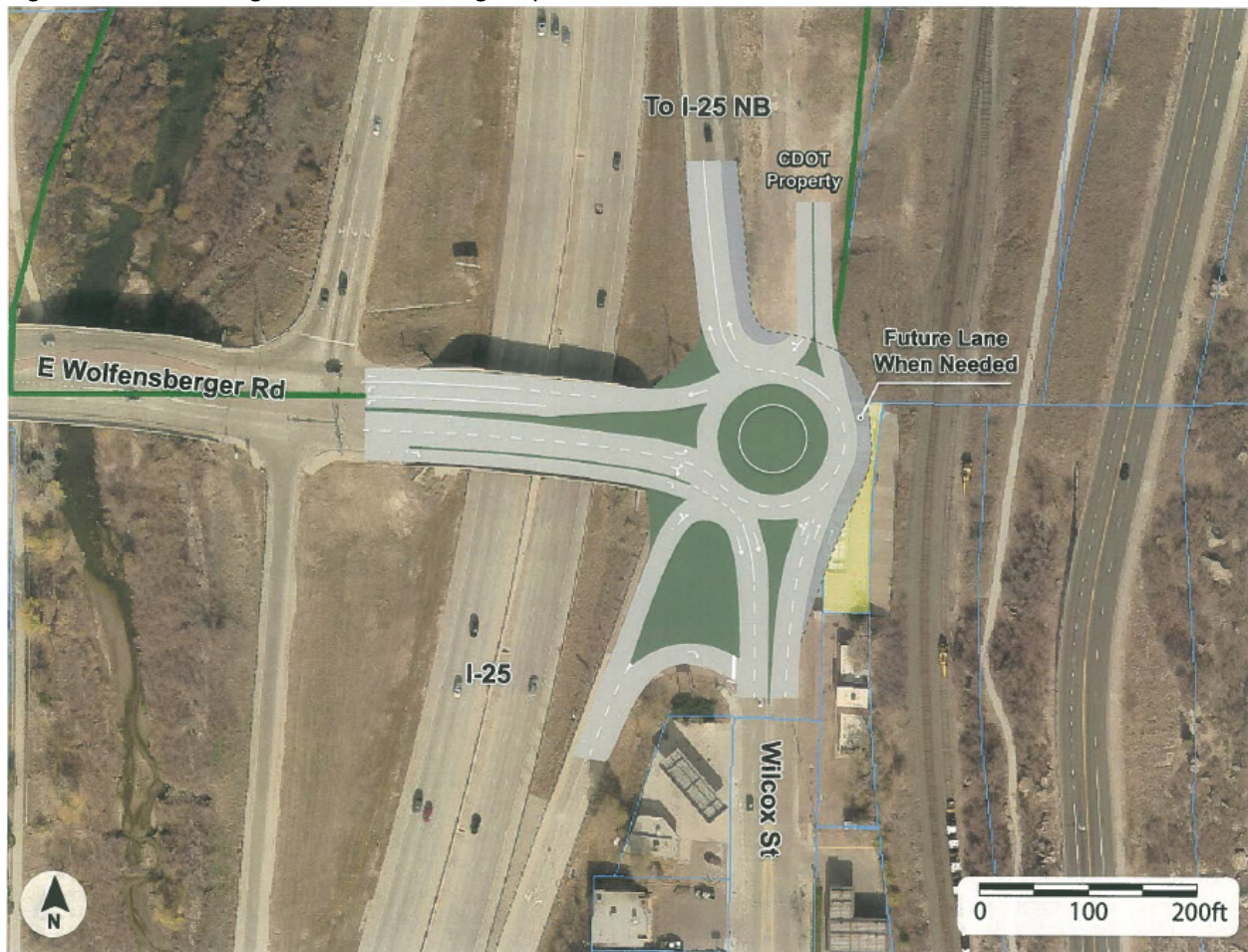


Table 2. Pros and Cons of the Wolfensberger Road Interchange Location.

Issues/Opportunities	CDOT Excess Parcel (I-25 at Wolfensberger Road)
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Land Availability	Pros	<ul style="list-style-type: none"> • CDOT excess ROW is available. • Castle Rock is seeking to acquire the gas station that is necessary for the roundabout design.
	Cons	<ul style="list-style-type: none"> • Parcel is oddly shaped (narrow and elongated), as well as constrained by a railroad on the east and the I-25 ramps on the west, which may result in difficulties in accommodating bus loading, bus ingress/egress, and passenger parking movements. • Further reduction of the parcel is likely under the ultimate buildout of I-25, thereby further reducing number of parking spaces. • Acquisition of gas station is needed for efficient access to this parcel (this acquisition may be done by Castle Rock to address safety concerns at this location regardless of transit station opportunities and the ultimate safety improvement may not be a roundabout).
Connectivity	Pros	<ul style="list-style-type: none"> • Centrally located within Castle Rock and accessible from existing road network, including an existing east-west connection over I-25 via Wolfensberger Road/Wilcox Street. • Within walkable distance from high density downtown and future mixed used redevelopment.
	Cons	<ul style="list-style-type: none"> • Poor vehicle and pedestrian access to the east due to railroad constraint. • Access to regional shared use path on the east can only be provided with a new railroad pedestrian underpass/overpass.
Traffic Impacts	Pros	<ul style="list-style-type: none"> • Direct access off I-25 via existing interchange. • Can combine this project with an intersection safety improvement project. • Traffic downtown is welcomed by retailers and congestion is also not as great of a concern.
	Cons	<ul style="list-style-type: none"> • Portion of traffic traveling through downtown Castle Rock. • Traffic mixes with interchange traffic. • Adding additional traffic to an area with existing traffic operation and safety issues.
Bustang Efficiency	Pros	<ul style="list-style-type: none"> • Northbound onramp allows for high efficiency of bus operations.
	Cons	<ul style="list-style-type: none"> • Southbound stop requires bus to exit freeway. • Although located immediately off the east side of I-25, buses will be required to enter local traffic at the roundabout (or new signalized intersection) to access the station.
Cost	Pros	<ul style="list-style-type: none"> • Relatively low up-front construction costs and no ROW acquisition necessary.
	Cons	<ul style="list-style-type: none"> • May require pedestrian bridge over I-25, depending on design option selected.
Ability to Turn Buses Around within Castle Rock	Pros	<ul style="list-style-type: none"> • Buses can use Wolfensberger Road interchange or station lot itself to turn around for Castle Rock-only buses, depending on design option selected.
	Cons	<ul style="list-style-type: none"> • None identified.
Timeframe	Pros	<ul style="list-style-type: none"> • Transit station improvements could be opened within a few years depending on funding availability.
	Cons	<ul style="list-style-type: none"> • None identified.
Future Parcel Development	Pros	<ul style="list-style-type: none"> • None identified because CDOT owns parcel for transportation use and not development.
	Cons	<ul style="list-style-type: none"> • No potential for future development of parcel.

Phased Development Opportunity	Pros	<ul style="list-style-type: none"> • May address near-term Bustang needs for a station in Castle Rock until ridership warrants more parking accommodations.
	Cons	<ul style="list-style-type: none"> • Not likely that the near-term improvements can be phased into a long-term station or meet long-term transit needs.
Ultimate Build Out Potential	Pros	<ul style="list-style-type: none"> • Potential for near-term improvements to serve as future park-n-ride lot or overflow parking for Castle Rock events.
	Cons	<ul style="list-style-type: none"> • If future Express Lanes (EL) are wanted for the I-25 mainline, then this becomes a disadvantage for this location because of weaving issues and difficulty getting to the station from the express lanes. • Uncertainty whether this location can accommodate future rail (needs further evaluation). • The parcel size is insufficient to meet future parking needs due to challenges of fitting a new parking structure within available space. • Does not appear to accommodate future rail connection.

VI. Walker/Pine Canyon Location

- The vision for this location is a center load bus station within the I-25 mainline that could ultimately accommodate passenger rail.
- Initial discussions considered a pedestrian structure spanning I-25, with drop-down points on both the west and east sides of I-25, in areas owned by the Walker family. As discussions continued, it was suggested that an east-west cross street be constructed under I-25 that would connect to Liggett Road to the west and a future local connector to the east. This cross street could be used both by bus passengers and vehicles to access the transit station parking areas, and serve as a local connector under I-25 thereby improving local access in the area.
- The Walker family approached CDOT looking for an opportunity to partner in the development of a transit station on the Walker property.
- There is some uncertainty, as well as flexibility, in how the transit station will tie into the local road network.

Figure 3. Walker/Pine Canyon Location



Table 3. Pros and Cons of Walker/Pine Canyon Location

Issue/Opportunity	Walker/Pine Canyon Location	
Land Availability	Pros	<ul style="list-style-type: none"> • Vacant land is available and land owner is willing to participate in a phased implementation plan that provides reasonable opportunity for near- and long-term transit needs.
	Cons	<ul style="list-style-type: none"> • Land may require acquisition or dedication, which will take time and extensive coordination.
Connectivity	Pros	<ul style="list-style-type: none"> • Existing connectivity to the east and west via Liggett Road and Black Feather Trail.
	Cons	<ul style="list-style-type: none"> • Will require ingress and egress from Liggett Road and collector road connection to transit station as no existing roadways exist. • It is distant from major arterials such as Plum Creek Parkway, Wolfensberger Road, and Meadows/Founders Parkway, with circuitous routes and extended time to get to the location. • Depending on the future possibility of full movement of Blackfeather Trail interchange with I-25, this may improve connectivity. Without the interchange, connectivity is extremely poor.
Traffic Impacts	Pros	<ul style="list-style-type: none"> • Access is via local road network which has potential for expansion.
	Cons	<ul style="list-style-type: none"> • Would increase traffic associated with the parking areas east and west of the station (e.g., Liggett Road).

		<ul style="list-style-type: none"> • Would anticipate increased traffic at flanking interchanges. • May require improvements to Liggett Road/Bridge, or other connector roads.
Bustang Efficiency	Pros	<ul style="list-style-type: none"> • The near-term slip ramp concept and the long-term center load bus concept allows for a high level of efficiency for Bustang operations.
	Cons	<ul style="list-style-type: none"> • None identified.
Costs	Pros	<ul style="list-style-type: none"> • Potential to work with developer to share costs. • Short-term improvements suggest low cost opportunities because of available space and willing partner to accommodate.
	Cons	<ul style="list-style-type: none"> • Would require substantial modifications and disruption of the I-25 mainline to accommodate the center load station. • Requires pedestrian bridge over or under I-25. • Relies heavily on P3 to be cost effective.
Ability to Turn Buses Around within Castle Rock	Pros	<ul style="list-style-type: none"> • In the near term, buses can use Wolfensberger Road interchange to turn around for Castle Rock-only buses.
	Cons	<ul style="list-style-type: none"> • The long-term center-load concept does not allow for buses to turn around at this location.
Timeframe	Pros	<ul style="list-style-type: none"> • Transit station improvements could be opened within a few years depending on funding availability
	Cons	<ul style="list-style-type: none"> • There is substantial development of connecting roads that must occur prior to the station becoming operational.
Future Parcel Development	Pros	<ul style="list-style-type: none"> • High future development potential. • Excellent opportunity for partnerships.
	Cons	<ul style="list-style-type: none"> • Uncertainty in jurisdiction, cost sharing, and agreements affecting site development plans.
Phased Development Opportunity	Pros	<ul style="list-style-type: none"> • For near term, there is sufficient space available for a surface lot.
	Cons	<ul style="list-style-type: none"> • There is substantial development of connecting roads that must occur before the station becomes operational.
Ultimate Build Out Potential	Pros	<ul style="list-style-type: none"> • Ability to work with developer to maximize efficiencies in design and phase implementation. • Ability to accommodate future rail connection.
	Cons	<ul style="list-style-type: none"> • Requires reconfiguration of I-25 to accommodate the center load station and pedestrian overpass for connectivity. • Relies heavily on development timing and success.